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Walden University

College of Social and Behavioral Sciences

This is to certify that the doctoral dissertation by

Minda J. Brown

has been found to be complete and satisfactory in all respects,
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the review committee have been made.

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Walden University
2019

Abstract

Relationship Between Stress Management Self-Efficacy, Stress Mindset, and Vocational Student
Success

by

Minda J. Brown

MA, Walden University, 2013

BS, University of Colorado at Colorado Springs, 2011

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Psychology

Walden University

November 2019

Abstract

Due to the passage of the Gainful Employment Rule of 2015, for-profit schools must ensure graduate employability, which forces vocational schools to make student success a priority. The concepts of stress mindset from the cognitive activation theory of stress and stress management self-efficacy from social cognitive theory were used in this study to assess the relationship of each to the employability of graduates. This study utilized a nonrandomized convenience sampling method and a multiple logistic regression with categorical dependent/criterion variables (gainful employment versus not) and continuous predictor variables (stress management self-efficacy, stress mindset) to compare the relationships. Stress mindset levels were measured using the stress mindset measure while stress management self-efficacy levels were measured by the stress management self-efficacy measure with 66 participants. The results of this study indicated that while both increased levels of stress management self-efficacy and a positive stress mindset were associated with a significantly increased likelihood of gainful employment, on its own, stress management self-efficacy was a better indicator than was stress mindset, on its own. The implications for positive social change from the results of this study, are a greater understanding of the importance of stress management self-efficacy and a positive stress mindset on the employability of technical school graduates. This knowledge could lead to the creation of improved stress management and stress mindset assistance for technical school students, which could lead to increased employability in these graduates.

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Chapter 1: Introduction to the Study

According to the United States Department of Education (2015), the Gainful Employment Rule went into effect July 1, 2015. This rule requires for-profit vocational, technical, and career schools to show that graduates can acquire jobs enabling them to earn enough to pay back their student loans, or face losing access to federal student aid. This study assessed student success as defined by the Gainful Employment Rule (United States Department of Education, 2015), which includes acquiring a job paying enough that the student's loan payment is less than or equal to 20% of his or her discretionary income, or 8% of their total income.

Student success is an important aspect of the education process, according to Voight and Ajinkya (2015), who claimed that focus should be placed on objectively ensuring students are able to accomplish their employment goals. Due to the new restrictions, it is more imperative than ever before that for-profit schools make sure student success is a top priority.

Many factors have been shown to affect student success in universities. Among others, these included student learning styles (Sizoo, Agrusa, & Iskat, 2005), social support (Wilcox, Winn, & Fyvie-Gauld, 2005), prior grades (Sulaiman & Mohezar, 2006), and demographics (Dearnley & Matthew, 2007). Sawatzky et al. (2012) identified stress management self-efficacy, or the extent to which an individual believes that they can effectively handle the stressors that they encounter, as an intervening factor for avoiding burnout in the university setting. Crum, Salovey, and Achor (2013) identified stress mindset, which is the belief that stress has either a positive or a negative effect on the self, as being flexible, and found that changing one's stress

mindset in a more positive direction increased students' desire to improve their academic performance.

This research focused on the way that technical school students react to stress, as stress management self-efficacy has previously only been shown to increase student success in the university setting (Sawatzky et al., 2012). Wye and Lim (2009) demonstrated increased employability of graduates with higher levels of stress tolerance. No research, however, has been conducted on the impact of stress management self-efficacy, and stress mindset on gainful employment among students in vocational/technical schools. This study will benefit the leadership of vocational and technical programs by increasing their knowledge base. This increased knowledge could then be used to develop interventions to address stress management self-efficacy and stress mindset, which would help increase the ability of students to acquire gainful employment, which would ultimately benefit the students, families, and the community.

I used a cross-sectional survey method to identify the stress-related characteristics of technical school graduates and compared these characteristics to the employment of the graduate to determine whether these characteristics affect the employability of technical school graduates. This study is important and may facilitate social change because students need to be provided with all available tools to help them succeed not only throughout school but in acquiring gainful employment in their field of study after graduation.

The following sections of this chapter include summaries of the existing literature that provide a more thorough analysis of stress management self-efficacy and stress mindsets, and how they relate to vocational student success and employability. In additional sections, I will identify the problem statement, the research question and hypotheses, the purpose and the

significance of the study, and provide a more detailed description of the theoretical framework and the nature of the study.

Background of the Study

This research focused on the way that technical school students react to stress, which has previously only been shown to increase student success in the university setting (Sawatzky et al., 2012). Wye and Lim (2009) demonstrated increased employability of graduates with higher levels of stress management self-efficacy. No research, however, has been conducted on the impact of stress management self-efficacy, and stress mindset on gainful employment among students in vocational/technical schools.

Stress management self-efficacy describes how an individual believes that they can deal with the stresses that they come across as they go about their daily lives. This belief is affected by previous life experience, their observations of the behavior of others, and the feedback provided to and from other individuals (Lazarus & Folkman, 1984). Those individuals who have previously encountered difficulties in handling stress, or who have watched others struggling with similar stressful events are significantly more likely to have issues with stress management self-efficacy. Those who have received negative feedback regarding their ability to deal with stress are also significantly more likely to have issues with stress management self-efficacy. Those individuals who have previously handled stress effectively are significantly less likely to have issues with stress management self-efficacy (Lazarus & Folkman, 1984).

Stress mindset is the belief that stress has an effect on an individual, and that the belief can be positive, in that stress is a positive force that is beneficial, or that the belief can be negative, in that stress is inherently harmful (Crum et al., 2013). Stress mindset has been

identified by Crum et al. (2013) as important in performance, in that a positive stress mindset leads to performance improvement, while a negative stress mindset leads to a decrease in performance. Performance improvement instead of a performance decrease is vital to student success, as it could affect the student's ability to do well in their schoolwork, prepare for and complete examinations, and effectively present learned material.

Yusoff (2010) demonstrated that having a positive stress mindset increased academic success. Self-efficacy in various forms has also been shown to be a strong predictor of academic success (Bandura, 1986; Pajares, 1996), as it affects the student's self-confidence in their own ability to achieve their goals. In examining vocational student success, the goal is ultimately gainful employment, or the ability of a graduate to acquire and continue in a career in the field of their training. Nurmi, Salmela-Aro, and Koivisto (2002) claimed that students who had increased self-confidence were more likely to achieve future goals, which would include successfully obtaining a position after graduation.

This study will benefit the leadership of vocational and technical programs by increasing their knowledge base. This increased knowledge could then be used to develop interventions to address stress management self-efficacy and stress mindset, which would help increase the ability of students to acquire gainful employment, which would ultimately benefit the students, families, and the community.

Problem Statement

Because the Gainful Employment Rule of 2015 essentially requires for-profit schools to ensure graduate employability, gainful employment must be a priority for these schools. According to the National Center for Educational Statistics (NCESa, 2017), approximately 27%

of adults have a nondegree credential, 85 percent of those adults utilized their nondegree credential for their current profession, and 67 percent stated that they acquired their credential from a vocational school. The NCES (NCESb, 2017) also identified that between the years 2000 and 2014, the total number of postsecondary education schools increased by 10%, while for-profit vocational type schools increased by 20%, and nonprofit vocational schools decreased by 6%. With this type of increase in schools, it is important to identify areas for increased success in the gainful employment area of education.

Additionally, the NCES (NCESa, 2017) compared the overall graduation rates at four-year institutions (54.8%), two-year institutions (32.8%), and less than two-year institutions (69.2%). These statistics do not portray the entire story, however, as retention rates can be influenced by a variety of aspects, which may be dissimilar between different types of schools as well. As an example, the cost of tuition influences students' decisions, according to Landry and Neubauer (2016). As financial circumstances change regularly, tuition costs are one aspect that could influence retention rates in schools with differing lengths of education.

Many factors have been shown to affect student success in universities. These factors include student learning styles (Sizoo, Agrusa, & Iskat, 2005), social support (Wilcox, Winn, & Fyvie-Gauld, 2005), prior grades (Sulaiman & Mohezar, 2006), and demographics (Dearnley & Matthew, 2007) among others. Sawatzky et al. (2012) identified stress management self-efficacy as an intervening factor for avoiding burnout in the university setting. Crum et al. (2013) identified stress mindset as being flexible and found that changing one's stress mindset in a more positive direction increased students' desire to improve their academic performance, which increases the student's chance for gainful employment. Relatively little information is known,

however regarding effective methods of increasing gainful employment in vocational school programs regarding stress management self-efficacy and stress mindset.

Purpose of the Study

The purpose of this study was to empirically study whether (a) levels of student perception of stress management self-efficacy is significantly associated with an increase of gainful employment in technical school graduates, (b) levels of student perception of stress mindset is significantly associated with an increase in gainful employment in vocational school graduates. This quantitative study investigated whether the dependent variable of gainful employment is influenced by the student's levels of stress-management self-efficacy and stress mindset. The first independent variable is operationally defined in this study as self-efficacy as measured by the mean score on Jin's (2010) Stress Management Self-Efficacy Measurement (SMSEM, see Appendix A). The second independent variable is operationally defined in this study as stress mindset as measured by the mean score on Crum et al. (2013) Stress Mindset Measure (SMM, see Appendix B). The dependent variable, or criterion variable, of gainful employment for this research study, is operationally defined as (1) having a job in their field of study, (2) having a job that pays an amount so that their loan payments are less than 8% of their total income or less than 20% of their disposable income. Participants will respond to a (a) dichotomous question to the above definitions, (b) as well as provide information about the annual salary and loan payments.

Research Questions and Hypotheses

Although graduation is the expected outcome of completing technical school, more importantly from the student's point of view, is the expectation of gainful employment. I

compared the results of a graduate survey identifying levels of perceived stress management self-efficacy and a graduate survey identifying levels of perceived stress mindset with the employment status of the graduate and performed a multiple logistic regression to determine how each aspect affects employability.

The following research questions and their hypotheses were tested:

Research Question 1: Does stress management self-efficacy significantly increase the likelihood of gainful employment in vocational school graduates?

H_01 : Stress management self-efficacy, as measured by the Stress Management Self-Efficacy Measure, will not be associated with an increased likelihood of success, as determined by gainful employment status, in vocational school graduates.

H_11 : Stress management self-efficacy, as measured by the Stress Management Self-Efficacy Measure, will be associated with an increased likelihood of success, as determined by gainful employment status, in vocational school graduates.

Research Question 2: Does stress mindset significantly increase the likelihood of gainful employment in vocational school graduates?

H_02 : Stress mindset, as measured by the Stress Mindset Measure, will not be associated with an increased likelihood of success, as determined by gainful employment status, in vocational school graduates.

H_12 : Stress mindset, as measured by the Stress Mindset Measure, will be associated with an increased likelihood of success, as determined by gainful employment status, in vocational school graduates.

Research Question 3: Do stress management self-efficacy and stress mindset significantly increase the likelihood of gainful employment in vocational school graduates?

H₀₃: Stress management self-efficacy and stress mindset, as measured by both the Stress Management Self-Efficacy Measure and the Stress Mindset Measure, will not be associated with an increased likelihood of success, as determined by gainful employment status in vocational school graduates.

H₁₃: Stress management self-efficacy and stress mindset, as measured by both the Stress Management Self-Efficacy Measure and the Stress Mindset Measure, will be associated with an increased likelihood of success, as determined by gainful employment status in vocational school graduates.

Theoretical Foundation

The two theories used as a basis for the research were social cognitive theory (SCT) and the cognitive activation theory of stress (CATS). Specifically, from social cognitive theory, the factor represented in this study is that of self-efficacy, and of self-efficacy, the aspect studied is stress management self-efficacy. From cognitive activation theory of stress, stress mindset will be utilized. Both theories address stress from a different angle, and together provide a complete representation of how stress affects students' ability to succeed in a technical school and ultimately acquire gainful employment.

Social cognitive theory describes how individuals learn behaviors by observing and mimicking others, who are being utilized as models for the behaviors. Bandura (1977) identified several important and collaborative factors of SCT including self-efficacy, the response to the behavior, and the environment or setting that affects the ability to observe or imitate the

behavior. Each of these factors interacts with the others and causes changes to occur based on the interactions that transpire. For example, if the response to the behavior is negative but the individual feels confident in their ability to perform the behavior (self-efficacy) they may try again, where if they do not feel confident, they may never try again. This response may also be affected by the environment or emotional state in which the individual is currently.

Additionally, the individual modeling the behavior can affect learning behavior. This effect could perhaps be because the demonstration of the behavior was inadequate, or there could be a problem or some other type of interaction with the relationship between the model and the observer (Bandura, 1977). Many different scenarios could significantly impact the ability of the learner to acquire new behaviors successfully.

Agentic theory is another aspect of SCT, according to Bandura (1986), which can affect the ability of the learner to absorb new information. This aspect of social cognitive theory involves self-regulation and provides a greater understanding of why individuals choose certain behaviors to emulate, while not picking others. Agentic theory also includes goal setting, which when goals are accomplished, has been shown to increase an individual's perception of self-efficacy (Bandura & Cervone, 1986).

The aspect of self-efficacy that is most important to this study is stress management self-efficacy, which describes how well individuals believe that they can deal with stress. Stress management self-efficacy is an important skill for college students, as the education process has been shown to cause significant amounts of increased stress, which can be alleviated to varying extents by self-efficacy (Pajares, 2002). Students that are more capable of handling stress will be more likely to get past that aspect and move toward success, while students that believe they are

more capable of handling stress will be more likely to continue throughout increased stress without giving up. Students that are more capable of handling stress will thus be more prepared to be successful in school and more likely to acquire and keep a job in their new career. This theory was the most appropriate choice because it increases knowledge of how individuals believe they can deal with stressors, which is important in developing a greater understanding of how students can be more successful in completing school and acquiring an appropriate position in their area of study.

CATS is the other theory upon which this study is based (Ursin & Eriksen, 2004). CATS is a theory that describes the means by which the human body responds to each of the different types of stressors, and how each type of reaction leads to either decreased health, increased health, or no change at all. The theory also describes the extent to which stress mindset, the belief that the stressor is harmful or helpful, affects these changes in the mind and body. CATS indicate that positive stress mindset, the belief that stress is beneficial, leads to either no change in the mind or body or increased mental or physical health, while the belief that stress is harmful leads to decreased health (Ursin & Eriksen, 2004). This theory is the most appropriate choice for this study because it measures how perceptions of stress affect the individual and will help to increase knowledge of how students can become more successful in obtaining their chosen career.

Although there are many theories of stress and its effects SCT is a thorough and wide-reaching viewpoint on stress and its effect on individuals. Bandura (1986) explained SCT as a theory that people absorb information about other's behaviors to imitate and acquire their behaviors. The following are the three main collaborative factors in SCT, according to Bandura

(1986): self-efficacy, response, and environment. All three interact and affect each other, either by increasing or decreasing another factor's effect.

First, self-efficacy is an individual's certainty that they possess or do not possess the ability imitate the behavior correctly. Second, the individual receives a response in reaction to a behavior imitated correctly or incorrectly. Last, the environment the individual is in or has been exposed to, affects an individual's ability to learn a new behavior effectively (Bandura, 1986). Each factor interrelates with the others so that someone, for example, who is punished (response) whether they correctly imitate the behavior or not, may not strive as hard to perfect their behaviors as those who receive praise or some other positive response when they achieve competence in a behavior.

There are also several additional theoretical components of SCT, which affect different aspects of the learning process. Modeling, an integral portion of SCT, identifies how individuals, such as parents, teachers, siblings, classmates and others demonstrate behaviors for others to learn and replicate (Bandura, 1971). Agentic theory is another aspect of SCT that deals with an individual's choices to self-regulate, or not self-regulate their behaviors in ways including goal setting (Bandura, 1986).

For this study, one of the most important aspects of SCT is that of self-efficacy specific to stress management, which is stress management self-efficacy. This portion of SCT is comprised of the perception of an individual of how well they can handle stress in various forms and a variety of situations (Lazarus & Folkman, 1986). Stress management self-efficacy is important to this study as college students typically encounter stressors that are often difficult for them to deal with, and both new and unexpected. Part of the process of encountering new

stressors involves using cognitive appraisal, which, according to Folkman, Lazarus, Dunkel-Schetter, DeLongis, and Gruen (1986), is the method by which individuals determine whether these stressors are dangerous to themselves, and then resolving whether to take actions to mitigate the threat. In a school setting, alleviating the threats posed by stressors might involve quitting school, which is detrimental to the school's business.

The other theory involved in this study is the CATS, described by Ursin and Eriksen in 2004. CATS explained the methods by which stress acts in the body. The word stress, however, can denote several different factors including the event or situation leading to stress, the perception of stress, the body's response to the stress, and the perception of the general stress response of the body. CATS identified that individuals who expect a positive effect from a stressor acquire either a positive stress response or no response at all, while those who have a negative expectation of the stressor acquire a negative stress response (Ursin & Eriksen, 2004).

Therefore, those who believe that they can handle a stressful event do so, while those who believe that the event will be difficult for them end up with a perception of a stronger stress response. Like a self-fulfilling prophecy, those individuals who think they will struggle, usually do, while those who think it will be easy will have less difficulty. Stress mindset, according to Crum and Langer (2007) is what leads to increased or decreased health and found that a positive stress mindset improves an individual's health while a negative stress mindset leads to decreased health. CATS exhibits the benefits of a positive stress mindset on both the physical and mental health of the individual (Ursin & Eriksen, 2004). The theories supporting this study will be discussed in further detail in Chapter 2.

Nature of the Study

My research included a quantitative analysis of the results of a cross-sectional survey given to graduates of a technical school. This survey is designed to evaluate (a) whether stress management self-efficacy significantly increases the likelihood of gainful employment in vocational school graduates, (b) whether stress mindset significantly increases the likelihood of gainful employment in vocational school graduates, and (c) whether stress management self-efficacy and stress mindset significantly increases the likelihood of gainful employment in vocational school graduates. A multiple logistic regression analysis was employed with categorical dependent/criterion variables of the acquisition of gainful employment or not, and continuous predictor variables of stress management self-efficacy and stress mindset.

The cross-sectional survey method was utilized to gather information from the graduate students. Cross-sectional methods with multiple logistic regression analyses are more effective and less prone to error than other methods possible for this study (Barros & Hirakata, 2003). The survey method is an effective method in acquiring the stress-related perceptions of the participants, which is needed for this study (Barros & Hirakata, 2003).

The variables studied in this research included one dependent variable and two independent variables. The dependent variable analyzed in this study is whether the participant is gainfully employed in their field of study, while the two predictor variables are stress management self-efficacy and stress mindset. The dependent variable of gainful employment is defined as acquiring a position in the participant's area of study, which meets the criterion from the federal government's Gainful Employment Rule (U.S. Department of Education, 2015). This

rule requires that the job pay enough that their loan payments are less than eight percent of their total income or less than 20 percent of their disposable income.

The first predictor variable of stress management self-efficacy is defined as measured by the participant's mean score on Jin's (2010) SMSEM, (see Appendix A). The second predictor variable of stress mindset is defined as measured by the participant's mean score on Crum et al. (2013) SMM, (see Appendix B).

This study will be utilizing graduates of a vocational school with 4 campuses located in the western United States. This study utilized a nonrandomized, convenience sampling method, which according to Acharya, Prakash, Saxena, and Nigam (2013) is the most commonly used method of examining a sample of a specific set of individuals who are knowledge experts in the perceptions of their levels of stress management self-efficacy and stress mindset.

The surveys were provided to the graduates, except those from the campus where I am employed. The results were then analyzed using a multiple logistic regression, which according to Dayton (1992), is to be used in situations like this study, where the dependent variable is dichotomous. A more thorough discussion of the research method is provided in Chapter 3.

Definitions

Burnout: Failed to finish a task, got worn out or tired due to overwork, stress, or overuse of mind and body resources (Freudenberger, 1974).

Cognitive appraisal: A method individuals use to determine whether an environmental situation pertains to themselves, and how it does or does not affect their well-being (Folkman et al., 1986).

Employability: The determination of whether an individual has the attributes or skills needed to acquire a specific job (Harvey, 2001).

Gainful employment: The Gainful Employment Rule requires private schools to ensure that their graduates acquire jobs that pay well enough to pay back their student loans without it being a hardship on the newly employed graduate (United States Department of Education, 2015). Specifically, this rule requires that the job pay enough that their loan payments are less than eight percent of their total income or less than 20 percent of their disposable income.

Self-Perception: An individual's feelings about themselves or their behaviors (Qenani, MacDrougall, & Sexton, 2014).

Stress mindset: The belief that stress affects the self, including positive stress mindset, or the belief that stressors are beneficial, and negative stress mindset or the belief that stressors are harmful (Crum et al., 2013).

Stress management self-efficacy: The extent to which an individual has confidence that they can or can effectively handle stressors that they encounter (Sawatzky, 2012).

Vocational school: An educational environment that offers career and technical skill-based courses (Fluhr et al., 2017).

Assumptions

Due to the design of the study, self-reported surveys are the most appropriate way of measuring the perceptions of individuals in their levels of stress management self-efficacy and stress mindset. I assumed that the participants were honest when filling out the two surveys they received. I assumed that the participants were willing to perform the two surveys. I assumed that the participants were not biased toward or against any of the survey questions or the purpose

of the study. I assumed the participants could understand the questions in the surveys.

Additionally, I assumed that the survey instruments that I used in this study were appropriate to measure graduate perceptions of their stress management self-efficacy and stress mindsets.

These assumptions were necessary to measure the perceptions of stress management self-efficacy and stress mindsets of vocational school graduates. The purpose of the study and the social change implications were communicated via the consent form to ensure that participants would respond honestly. Although comprehension is an assumption, the participants were students who are a part of the literate population.

Although according to Tongco (2007), self-reported survey methods are the best way to measure individual perceptions, biases may still occur. Kelly, Soler-Hampejsek, Mensch, and Hewett (2013) described bias in self-reports of behavior or mental states due to individuals' desires to appear normal to others, as social bias. I addressed social bias by making the surveys anonymous so that individuals would not be as concerned with how they might be perceived by others.

Another possible area is that of nonresponse bias or the degree to which the differences between individuals who respond to surveys, and those that do not, affect the results of the study. Roberts and Allen (2015) explained that online survey methods in research are preferred by both students and teachers and have a higher rate of response than other types due to accessibility and lack of time constraints in response. However, Groves and Peytcheva (2015) performed a meta-analysis study of nonresponse bias and concluded that personality differences might contribute to nonresponse rates, it is more often related to the purpose of the survey as stated in the request, or

to the length or difficulty of the survey itself. I addressed this bias by writing a compelling study purpose and highlighting the brevity of the surveys being taken by the respondents.

Scope and Delimitations

The research problem addressed in this study is that of identifying aspects of individuals that do or do not contribute to either promoting or reducing the ability of a vocational school student to graduate and acquire employment in their field of study. The specific foci of stress management self-efficacy and stress mindset were chosen to increase knowledge of how these two aspects affect vocational student success. This study has three specific delimitations.

My first delimitation is the specific scope of study. Rather than trying to estimate each possible aspect of an individual that contributes to student success, I have restricted this study to stress management self-efficacy and stress mindset. Stress management self-efficacy has been shown to affect university student success in multiple areas, such as the likelihood of a student attempting a specific task (Lunenberg, 2011), or career choices (Bandura, 2011). Stress mindset has been shown to affect student success in the improvement of academic achievements using positive stress mindset (Yusoff, 2010), and in the avoidance of stress (Bayer & Gollwitzer, 2005; Sawatzky et al., 2012).

My second delimitation is that I have acquired data from one vocational school. It is not possible to survey every graduate of every vocational school, so one school has been chosen to represent a generalized population of vocation school graduates. There are many differences between types of vocational schools, and well as between the populations of various types of vocational schools. There are also many dissimilarities between students of vocational schools and university students (Bishop & Mane, 2004; Chung, 2012; Mane, 1999). All of these

variances, however, are beyond the scope of this study, as I chose to study vocational students due to the abundance of studies on universities and community colleges, and the lack of information regarding vocational schools.

My third delimitation is that I am studying graduates only. Including current students will look at student academic success but will not provide information on student success in acquiring employment in their area of study, and so is beyond the scope of this study. Due to the recent implementation of the Gainful Employment Rule (United States Department of Education, 2015), increased scrutiny has been placed on vocational schools, and there is an increased requirement for student success in acquiring gainful employment in their field of study. This research focused only on those students who have graduated and how their ability to manage their stress and their stress mindset affected their employability.

Limitations

There are limitations in this study. First, additional confounding variables that might influence the ability of vocational students to be successful were not investigated or controlled. These variables include financial difficulties (Landry & Neubauer, 2016); family interference (Chung, 2012); and other specific areas of self-efficacy (Hirschy, Bemer, & Castellano, 2011; Sandler, 2000). Additional possibly confounding variables include personality traits (Shearer, 2009); goal setting (Zimmerman, Bandura, & Martinez-Pons, 1992); self-confidence (Sheldrake, 2016); and student connections with groups, teachers, staff, or classmates (Fowler & Boylan, 2010; Pritchard & Wilson, 2003). Motivation (Shih & Gaman, 2001), and interpersonal interactions such as those related to curriculum, educational, and noneducational interactions (Chan & Weng, 2016), are additional confounding variables that will not be investigated.

Additionally, life experiences may have shaped some graduates in ways that affect employability (Chung, 2012), they may have additional outside stress (Keller et al., 2012), or they may have been positively or negatively affected by a particular teacher or classmate (Pritchard & Wilson, 2003). Although each of these variables is certainly important in the employability of vocational school graduates, exploring them is not within the scope of this study. This research focused only on how stress management self-efficacy and stress mindset predict employability.

Significance of the Study

This study is significant in that it revealed new information in the employability of vocational school graduates. Previous studies have examined how positive stress mindset and stress management self-efficacy affect student success in both community colleges and universities. Little research has been done in vocational schools, however, in either of these two areas. Students attending vocational schools often have different goals and backgrounds than those attending community colleges or universities (Chung, 2012). Consequently, an increased knowledge regarding vocational school students will fill a gap of understanding in how the employability of these students is affected by their levels of stress management self-efficacy and stress mindset.

Significance to Theory

According to Bano (2015), education is essential for an individual to be competitive in today's world, to handle life's difficult situations, and to set themselves apart from others. Smith et al. (2016) noted that with the increase in technology and global networking, education is more important than ever before. Education without employment is nearly useless, however. My

study is important to this field because it leads to a greater understanding of how vocational students can become successful in their field.

This research will advance knowledge of SCT, by providing additional information about how levels of both stress management self-efficacy and stress mindset affect student success in vocational school students. It was expected that the results would show that both stress management self-efficacy and stress mindset have a significant effect on student success in vocational students.

Significance to Practice

With increased knowledge of what affects student success in vocational students, educational policymakers can address ways to improve success rates. These methods can help future students increase their ability to succeed and acquire gainful employment. Sawatzky et al. (2012) suggested that providing university level students with training in stress management could improve student success rates. If the findings of this research indicate that vocational students need training in stress management as well, this essential training could be provided to vocational students, increasing their success in school and in attaining employment within their field. Although Leland (2015) argued that mindfulness training should be put into practice in every aspect of the education process, research showing that stress mindset does indeed affect student success in vocational students can substantiate those claims and lead to progress in developing mindfulness training programs in vocational schools.

Significance to Social Change

The results of this study will effect social change by acquiring a greater understanding of stress-related issues affecting the success of the graduates of vocational schools. Once an

increased awareness of the causes and effects are known, schools, policymakers, and students themselves, can contribute towards improving student success rates by addressing the issues and by creating interventions to benefit those who need assistance, while encouraging the efforts of those who need less assistance in stress management. Policy changes, stress management training, and mindfulness training are some of the interventions that can more effectively improve student success in vocational schools. As more students become successful employees, their lives are improved, as is the work environment itself, and social change is effected by improving the workplace of the community.

Summary

A significant area of need in higher education is that of student success. In vocational schools, a recent law, the Gainful Employment Rule (United States Department of Education, 2015) has been enacted. This new law requires private vocational, technical, and other for-profit schools to show that their graduates are employable, acquiring a career which compensates well enough to allow the student to repay their student loans. Gainful employment is defined as having loan repayments that are lower than 20 percent of their disposable income or eight percent of their total income to keep federal financial aid funding for their students.

This rule puts vocational schools in the increased position of needing to ensure that their students are employable, while their loan payments are low, or the school may go out of business due to their students facing a lack of ability to pay for their education. This study will examine how the levels of stress management self-efficacy and stress mindset affect vocational students' employability. The findings of this research will help school policymakers, students, and the community at large by providing information that can help improve future workers.

My study utilizes two theories to support it. The first is SCT, put forward by Bandura (1986) and describing how individuals acquire behavior by imitating modeled behavior from another individual or group, such as family, teachers, friends, classmates, among others. One important factor is that of self-efficacy, or the perception of an individual of their ability to handle a specific situation, accomplish a certain task or imitate a behavior (Bandura, 1986).

Particularly for this research study, the aspect of stress management self-efficacy will be employed to provide information on how the extent to which vocational students handle stress affects their successfully finishing school and acquiring a position in their field of study. Stress management is an important aspect of the self-efficacy factor of SCT because students typically encounter a great deal of stress when attending a higher education program. Studies have been done on how levels of stress management self-efficacy influences student success in universities and community colleges, however, little research has investigated the same information in vocational school students.

The second theory utilized for this study is that of CATS developed by Ursin and Eriksen (2004) to describe how the body and mind are affected by stressors. CATS identifies differences in mind and body reactions to positive and negative stress mindsets. A positive stress mindset, according to Ursin and Eriksen (2004), means that the individual believes that a particular stressor, or multiple stressors, are beneficial to themselves, rather than a negative stress mindset indicates that the individual believes that a specific stressor or additional stressors are harmful to themselves.

A positive stress mindset was shown by Crum and Achor (2013) to improve health and performance in various tasks, while a negative stress mindset maintains the normal state of the

mind and body or decreases health and performance. Yusoff (2010) demonstrated the benefits of a positive stress mindset in encouraging academic stress. CATS is an important theory in developing a greater understanding of how stress affects the ability of vocational school students to succeed in their chosen career, and so was chosen for this study for this purpose.

I collected the results of two surveys provided to vocational school graduates. The first survey is the SMSEM (Jin, 2010), measuring the first predictor variable of levels of stress management self-efficacy. The second survey is the SMM (Crum et al., 2013), measuring the second predictor variable of levels of stress mindset. The dependent variable that of whether the respondents are gainfully employed in their field of study will be used in a multiple logistic regression. This regression will be used to determine what effect, if any, the levels of stress management self-efficacy and stress mindset have on the ability of vocational school graduates to successfully acquire gainful employment.

Chapter 1 provided a brief overview of vocational students, the purpose of the study, and described its variables and operational definitions. Chapter 1 also briefly described both Bandura's (1986) social cognitive theory and Ursin and Eriksen's (2004) cognitive activation theory of stress. Chapter 1 also briefly explained how each theory pertains to student success. Additional aspects of both theories are further explored in Chapter 2, which will also include a review of the literature associated with student success.

Chapter 2: Literature Review

The purpose of this quantitative study is to contribute to current knowledge of gainful employment in technical/vocational schools by identifying student characteristics, such as stress management self-efficacy and stress mindset, and their relationship to student success. With the passage of the Gainful Employment Rule that commenced in 2015, for-profit technical, vocational, and career schools must demonstrate that the jobs obtained by their graduates come with wages high enough for them to pay back their student loans. Schools that cannot show that graduate loan payments are 20% or less of their discretionary income or 8% or less of their total salary will lose access to federal student loan funding. This penalty will keep most students from being able to afford to attend, and thus effectively put the school out of business. Vocational schools must ensure that their graduates are employable, to remain in business.

Current literature shows that many factors affect graduate employability. Two of these factors include stress management self-efficacy and stress mindset. Stress tolerance has also been shown to increase employability. Most of this research has been done at the university level, rather than a vocational school setting, therefore, additional research should be done on vocational school graduates. In this chapter, I will first discuss the literature search strategy that I employed for this study. Next, I will discuss the theoretical foundation framing the study, followed by a thorough literature review.

Literature Search Strategy

In this section of the project, I examined literature relating to the successful graduation and employment of students who have graduated from a vocational school. I conducted numerous searches for scholarly evidence using only peer-reviewed only sources and used the

following databases primarily: Academic Search Complete, Education Research Complete, Education Resources Information Center (ERIC), MEDLINE, PsycARTICLES, and PsycBOOKS.

The following search terms were utilized: *for-profit schools*, *technical schools*, and *vocational schools*, with *stress management self-efficacy*, *student success*, *graduate employability*, and *stress mindset*. I searched each term separately and then combined the school terms with each of the additional aspects in separate searches to increase the depth of the search. For the schools with stress management self-efficacy, I found only one relevant article but was able to find more by using the references used by the author for relevant points. I expanded each of my article searches using the same method. For the schools with student success, I found four articles, while I found nine articles for the schools and graduate employability, and two articles for the last category of schools and stress mindset. I was also able to find significantly more articles using the references found in each of the articles in the remaining categories as well. Because the theoretical framework is held up by both seminal and current literature, the search was not restricted by year or type.

Theoretical Foundation

Two theories support this study, Bandura's (1977b; 1986) SCT, and Ursin and Eriksen's (2004) CATS. From SCT, the aspect utilized for this study is that of self-efficacy, more specifically, stress management self-efficacy. From the cognitive activation theory of stress, this study utilized the concept of stress mindset.

Social Cognitive Theory

The very beginnings of SCT started with Holt and Brown (1931), who claimed that all animals, including humans, acted on the same types of drives, including emotions, feelings, and desires. Miller and Dollard (1941) expanded and revised Holt and Brown's theory, calling it social learning theory (SLT), by specifying that acquisition of learning was accomplished with drives, cues, responses, and rewards, including the drive or social motivation. Bandura (1977a; 1977b) identified additional aspects of how individuals acquire and utilize knowledge of behavior within SLT, including how self-efficacy is developed, and how it affects behavior. Later, Bandura renamed SLT to SCT to highlight the importance of cognitive function in both the acquisition and action of behaviors (Bandura, 1986).

According to Bandura (1986), the main concept of SCT is that individuals learn behavior by observing the behaviors of others and that both the learning and the imitation of the behavior is affected by three main interactive factors. One factor is self-efficacy or the personal belief of the individual that they will or will not be able to imitate the behavior correctly. A second factor is a response the individual receives from performing the behavior correctly or incorrectly. The third factor is the setting or the environment that affects the individual's ability to imitate the behavior that is being learned. Each factor interrelates with each of the others. For example, someone who receives a positive response from correctly learning behavior may acquire a higher self-efficacy, or belief in their ability to correctly imitate the behavior the next time.

Modeling. One of the major theoretical components of SCT is modeling, with the learner observing another demonstrating the behavior to be learned. Behavior is changed by observational learning, with the behavior to be learned being modeled, usually by one respected

by the learner. Anyone can be a model, including parents, teachers, siblings, classmates, or even celebrities. The model may not even realize that they are being observed, or they may be intentionally modeling behavior, and modeling is not limited to visual demonstrations only, as it also includes both written and verbal behavior as well. Bandura (1971) noted that children are more likely to imitate those they believe are more similar to themselves, such as the same gender, or age group, and are receptive to both positive and negative reinforcement of behavior, including the reinforcement observed as being provided to another individual imitating a particular behavior.

Bandura (1971) measured the way children learned behavior in the famous Bobo doll experiment and identified four main cognitive functions of modeling. These four include the selective attention given by the observer to (a) specific social behaviors, (b) how learners retain the information from various observations, (c) how behavior is encoded and decoded into the reproduction of the behavior, and (d) how feedback leads to adjustments in future reproductions of the behavior.

Modeling has been shown to promote creativity by observing different models and synthesizing the behaviors observed (Bandura, 1986; Gist, 1989; Harris & Evans, 1973). Modeling has also been shown to be selective, providing the ability to adjust the learned behavior, rather than simply mimicking it (Bandura, 1986). This selectivity allows the individual to determine how they will portray the behavior. Individuals attending school must be able to observe, learn, take the information acquired, and then apply it towards their future employment. Bandura (1977) claimed that the process of learning would be significantly more difficult if individuals had to rely on the outcome of each action to advise them on what to do in the future.

Both schools and organizations also utilize modeling to train students or employees the expectations they must meet (Bolton, 1993).

Modeling is the method of learning where behaviors are demonstrated by someone respected by the observer, who then imitates the behavior demonstrated. Modeling is an important aspect of post-secondary education, as students choose to attend to learn new knowledge and behavioral skills. Educators intentionally model skills students need to learn while demonstrating what types of behaviors are and are not acceptable in the classroom. In a technical school, educators are also, and perhaps primarily, responsible for demonstrating the types of behaviors that are and are not acceptable in the students' future workplace.

Self-efficacy. Self-efficacy is the aspect of SCT that covers one's belief in their ability to accomplish a specific task or set of tasks. Lunenburg (2011) identified three basic areas that are used to determine self-efficacy. The first basic area is self-efficacy magnitude, which assesses the difficulty level of the task. The second area is self-efficacy strength, which describes the degree of confidence one has in being able to handle various levels of difficulty. The third basic area is generality of self-efficacy, which shows how an individual's ability to perform in one area can be translated to other areas. Those with higher levels of self-efficacy in any or all three areas will be more confident when approaching tasks.

Self-efficacy is dependent upon effective cognitive modeling to acquire the self-knowledge that is necessary (Debowski, Wood, & Bandura, 2001; Gist, 1989). Individuals that acquire knowledge during cognitive modeling have higher self-efficacy than those that passively learn behavior, such as by attending a lecture or reading a textbook (Debowski, Wood, & Bandura, 2001; Gist, 1989). Students, therefore, can achieve greater levels of self-efficacy

depending upon the methods of training, regardless of background or previous history. Also, Lunenburg (2011) showed that students tend only to tackle problems for which they have self-efficacy beliefs, which has important implications for schools. Bandura (2001) described how individuals with higher self-efficacy focused positively on future choices, while those with lower self-efficacy focused negatively on problems and the risks that those problems imposed.

Self-efficacy (Bandura, 1997) is a perception and self-evaluation of an individual's ability in a particular area, or their capability of a particular behavior, and is not necessarily related to the individual's self-esteem. Perceived self-efficacy has been studied in many areas since Bandura first introduced the concept and is widely recognized as an important factor in many different mental health conditions. These conditions include anxiety, bulimia, depression and drug addiction, physical health conditions such as athleticism, health promotion, and disease prevention, and even organizational and political systems (Bandura, 1997; Maddux, 1995; Schwarzer, 1995). Studies have also shown that self-efficacy can be generalized as more individual than cultural, gender-based, or age-based (Earley, 1994).

As increased self-efficacy has been shown to impact performance in school greatly, it is important that the educational process include coaching and building students' self-efficacy beliefs to improve functioning both in school and future employment. Although previous experiences have already informed an individual's self-efficacy beliefs when they begin an educational program, there are many things that schools can and should do to increase students' self-efficacy beliefs in the new skills and behaviors they are learning.

Agentic theory. Another important aspect of SCT, according to Bandura (1986) is that of an individual's agency, or other self-regulatory factors, in understanding how and why

individuals choose to behave in certain ways, in spite of, or because of, the modeling that they have observed. Agency allows an individual to determine for themselves which behaviors they have observed they will choose to imitate, or even specifically which to imitate under each unique set of circumstances. One important area for a technical school to focus on is that of encouraging students to choose to utilize their agency in retraining behaviors to match those required in the workplace.

To self-regulate their behavior, individuals must evaluate this behavior based upon their standards, and determine whether this behavior is an increase, or a decrease based upon the standard they used to judge the behavior (Bandura, 1986). As the standard used is personal, it is all within the perception of the individual. Some will choose to positively judge their behaviors and others negatively, even if it is the same behavior, as perception varies uniquely with each individual.

Goal setting is a method that can be used to improve self-efficacy; however, the goals must be achievable to increase, rather than decrease self-efficacy. Individuals with already high levels of self-efficacy have been shown to set more challenging goals, while those with lowered levels of self-efficacy set simpler goals that would require less effort (Bandura & Cervone, 1986). These principles have been applied to goal setting in many areas, including the educational environment, health, organizations, and affecting social change (Bandura, 2004; Frayne & Latham, 1987; Zimmerman, 1989).

Agency allows an individual to make choices about when or if to imitate behavior they have learned. To determine when it is appropriate to exhibit specific behaviors, modeling must occur. Demonstrations of when and how appropriate behavior is conducted are part of the

educational process of a technical school. Because technical schools must focus on preparing students for employment, modeling goal setting and self-evaluation are essential areas of concentration.

Stress management self-efficacy. Stress management self-efficacy is the part of self-efficacy that deals with how an individual believes they can handle the stress that they encounter. As self-efficacy is affected by previous experiences, observations of others, and feedback given from others, so is an individual's perception of their ability to handle stress. Individuals who have had previously troubled experiences with their ability to handle stress, who have watched others struggle through the same task they face, or who have received negative feedback about their ability to handle stress, are more likely to struggle with stress management than those who have not experienced any of those situations.

Stress management self-efficacy is the perception of the individual of how well they can handle stress, and like the more general category of self-efficacy, it has been specifically linked to many different areas. Lazarus and Folkman both contributed a great deal toward the knowledge of stress and coping mechanisms. One contribution was describing the onset of stress as when the individual determines that the event occurring is beyond their ability to cope (Folkman et al., 1986; Folkman & Moskowitz, 2000; Lazarus, 1966; Lazarus & Folkman, 1984). Folkman et al. (1986) further portrayed stress and coping mechanisms using the term cognitive appraisal as the method by which the individual determines an event as dangerous and decides the actions to be taken to mitigate the threat. Folkman and Moskowitz (2000) described positive aspects of stress and coping as an adaptive function that benefits the individual, and Lazarus (1966) introduced insight into the concept of coping and psychological stress.

Lev and Owen (1996) identified the importance of reducing stress by improving the individual's perception of their ability to cope with the stressor or stressors they are facing. Clark and Dodge (1999) identified stress management self-efficacy as a predictor of an individual's ability to manage and even fight off diseases and emphasized the importance of providing stress management self-efficacy training to patients to increase the ability to manage their health conditions and to prevent future problems. Hughes, Robinson-Whelan, Taylor, and Hall (2006) demonstrated the effectiveness of a stress management intervention on the mental health of individuals with physical disabilities. Schulz et al. (2002) found benefits associated with stress management in caregivers of dementia patients. In a third study, Riley and Fava (2001) identified the value of a similar intervention in individuals with an HIV positive status. All three of these studies are in populations considered to be markedly challenging problem areas in the field of health.

The stress management self-efficacy aspect of social cognitive theory was used to frame this study because it identifies how individuals can learn to manage their stress levels and not become weighed down with stress (Bandura, 1977, 1986). Students are often inundated with stress, and the ability to manage one's stress is an essential skill for students to graduate and successfully find employment. An increased understanding of how stress affects the body, using the cognitive activation theory of stress, will be presented next.

Cognitive Activation Theory of Stress

Ursin and Eriksen's (2004) theory, CATS describes the mechanisms of stress in the human body as a system of alarm and response, with both alarms and responses of varying strengths and types and identified the relationship of stress to health or disease. Ursin and

Eriksen (2004) described the word stress as having several meanings depending on the aspect or the approach, as stress can mean the event causing stress, the perception of the stress, the general stress response and the perception of the stress response.

CATS shows that positive expectations of the stress response lead to a positive response, or a lack of arousal level, and no effect on the body, where negative expectations of the stress response lead to increased arousal and increased effect on the body (Ursin & Eriksen, 2004). This mindset means that as long as the individual believes that they can cope with stress well and that the stressor will not be harmful to them, their body's reaction will be negated, and they will not suffer any physical effects from the stressor. Conversely, those who do not believe that they can cope well, will suffer from the physical effects of stress on the body (Ursin & Eriksen, 2008).

These physical effects include the chronic elevation of cortisol and other pro-inflammatory responses that have been consistently linked to the majority of health issues including chronic inflammatory diseases and cancers (Selye, 2013; Wolff, 1953). Ursin and Eriksen (2007) recognized that there are certainly situations where medical causes are fueling a stress response but claimed that many stress responses could be mitigated by utilizing coping mechanisms, and identified multiple situations where improved coping skills could have prevented sickness absences (Ursin & Eriksen, 2002, 2010). Meurs and Perrewé (2011) discussed the importance of CATS and claimed that it had multiple benefits when used for organizational stress research.

CATS has been used to identify similarities in unnecessarily stressful situations across cultures and species (Eriksen, Murison, Pensgaard, & Ursin, 2005), and identified as a key factor

in prolonged stress responses (Brosschot, 2010; Brosschot, Pieper, & Thayer, 2005). Humphrey (2012) studied the stress response to a student-led stress reduction group and found that just the act of preparing to lead the group in an activity designed to help cope with it, enabled students to decrease their stress. Arnetz (2005) discussed the implications of CATS in organizational well-being. Panaccio and Vandenberghe (2009) demonstrated the value of providing support to the employees of an organization while changing the stress mindset to positive. Both studies demonstrated that these changes benefitted not only the organization but improved the well-being of the employees both on and off the job. Meurs and Perrewé (2011) claimed that looking into occupation related stress issues,

Stress mindset. Crum and Langer (2007) revealed the benefits of looking at the positive side, in improving an individual's health simply by teaching them that what they were currently doing was beneficial to their health. Participants were shown the positive benefits of the work that they were currently doing, and subsequently, each of their measurable health markers increased. Crum et al. (2013) continued the theory by showing that a positive stress mindset led to an improvement in performance, and Yusoff (2010) showed the benefits to academic success of utilizing a positive stress mindset. Stress does not have to be harmful to performance, as long as the individual perceives it as a positive event and believes that they can cope effectively with the stressor. The available literature focuses primarily on positive mindset and the avoidance of stress (Bayer & Gollwitzer, 2005; Sawatsky et al., 2012), while this study focuses on a positive stress mindset, or using stress as a positive (Brooks, 2014; Keller et al., 2012).

The CATS theory was chosen because it demonstrates the importance and benefits of a positive stress mindset, and this study investigates the effects of stress mindset on the

employability of vocational students. Stress mindset is important in the educational environment, as those who have a positive mindset has been shown to have a beneficial effect on academic performance. Therefore, it is expected that students with a positive stress mindset will be more likely to succeed in both school and their future employment.

Summary and Conclusions

Together, social cognitive theory and the cognitive activation theory of stress operated as the theoretical foundations for this study involving student success of vocational school students. I utilized the stress management self-efficacy aspect of social cognitive theory and the stress mindset of cognitive activation theory of stress to identify how each affects student success in a technical school setting. Operational definitions of stress management self-efficacy were derived from social cognitive theory, while the operational definitions of stress mindset came from the cognitive activation theory of stress.

Social cognitive theory from Bandura (1977a) describes the mechanisms by which individuals acquire new skills and behaviors from others. Modeling is an aspect of SCT that identifies how people demonstrate those skills, while individuals observe their behavior, and then imitate the behavior. Modeling is especially important in the technical educational setting, as multiple skills are demonstrated for learners to practice and perfect before graduating and seeking employment. Agentic theory, another part of SCT, according to Bandura (1986), describes an individual's agency in determining which behaviors, if any, that individual will imitate, and why this decision is made. An educational environment would benefit by encouraging their students to use their agency to imitate those skills and behaviors that will most assist them when attempting to acquire employment in their field of study.

Self-efficacy, as described by Bandura (1997), is an important characteristic in the educational environment, and is identified by SCT as that trait which directs an individual's certainty in their own ability to accomplish a task or test. Self-efficacy beliefs can be strong in some areas while weak in others, and while it is important in one's daily life tasks, it also significantly affects overall self-confidence.

There are several divisions of self-efficacy, including the perceived difficulty level of the task, one's confidence in their own ability to handle differing difficulty levels, and how well that ability can be generalized to similar and not so similar types of tasks (Lunenburg, 2011). There are also multiple areas where individuals utilize their self-efficacy. Stress management self-efficacy, a subset of self-efficacy, is the division that deals specifically with how well people believe that they can handle stresses that they may face.

Literature Review

There are many aspects of higher education that lead students to choose to continue their education or not, and if they do continue their education, to choose either an academic or occupational school. The increasing costs and the decreasing value of college bachelor's degrees were discussed by Barrow and Rouse (2005), who determined that a college education was still worth the cost of acquiring it. Barrow and Rouse (2005) claimed that the average college graduate with a bachelor's degree could make enough in 10 years to cover the costs of attending and acquiring a bachelor's degree, including the money they would have made during the time they were enrolled in school. After those ten years, the extra money made by the graduate would be profitable for them unless they only work for ten years. Not all high school students are

looking at the future in the same way, however, and some are not willing or able to wait those ten years to have increased income.

There are additional aspects, however, that influence students in opting out of attending higher education. Landry and Neubauer (2016) examined the current government-sponsored financial aid in the United States and found the following three major areas of change: significant increases in the cost of tuition, increased length of time to graduation, and increased availability of government-sponsored financial aid. The problem with this situation, according to Landry and Neubauer (2016) is that all three areas combine to increase the debt of college students, as the increased costs, over an increased period, with plenty to access to funding, leads to greater long-term debt for college students today. Looking ahead at their future mountain of debt, students are faced with several choices, such as not attending school, or choosing either an occupational school or an academic institution.

While there is a multitude of reasons why some students would make different choices than others, there are a few common motives. Zuckerman (1981) found that male and female students differed widely in their reasons for reasons for choosing the type of education they acquire. Zuckerman claimed that female technical students typically have traditional career goals, while male technical school students are more nontraditional, but are still not likely to choose a female dominated career path. Chung (2012) examined the circumstances under which students enroll in for-profit colleges and found that the majority of these students start right out of high school, just as those in universities and community colleges. Chung (2012) also found that they are less likely to have had parents who were highly involved in their education, often came from a family background where fewer family members were college educated and were

also from families with a lower income level than those who chose to attend a university or even community college.

Just because someone is the first person in their family to have attended college, or whose family is not as involved as others, does not mean they cannot succeed, just that their expectations of college may not be as realistic as someone who was coached by a parent who had attended college. This could lead to some technical students having lower levels of stress management self-efficacy as one reason for choosing a technical school over a university or community college, as they do not feel prepared for the stress that accompanies that level of education. Another reason for not choosing a university or community college may be that they feel more strongly that the stress of attending higher education classes could be unhealthy for them, and therefore they choose a technical school instead.

Hayward (2010) discussed areas of concern in the transition of vocational students from school to work but determined that vocational training improves employability for those who are not college bound. Mane (1999) demonstrated that high school students who were not planning on going to college, and that took vocational courses while in high school, were significantly more employable than those who did not plan on attending college and did not take vocational courses. Bishop and Mane (2004) examined the relationship between vocational education provided at the high school level and subsequent earnings. They found that offering vocational courses to high school students who were not planning on attending college not only increased retention but increased earning potential significantly for those students who took advantage of these courses (Bishop & Mane, 2004).

There are apprehensions associated with vocational or for-profit schools, however.

Patrick, Care, and Ainley (2011) examined the reasons why people choose academic or vocational schools and found that interests and self-efficacy were significantly associated with the choices made by prospective students. Therefore, although some students may have an academic interest, they may not feel capable of working at the university level and so choose a vocational school. Other students may have academic interests, feel capable of working at the university level, and choose a university. A third group may have vocational interests, feel capable of vocational level work, and so choose a vocational school. Some may have vocational interests but feel capable of university-level work and find an academic choice at a university. Finally, some students may feel pressure to choose a different school than they feel capable of handling, or that suits their interests.

A study performed by Cellini and Chaudhary (2014) identified concerns regarding the increase in the number of for-profit schools and their student enrollment. According to Cellini and Chaudhary (2014), between the years 2000 and 2010, student enrollment in for-profit institutions more than tripled in numbers. This increase in student populations at for-profit institutions is a big problem as some of these schools are reported to have dishonest practices (Cellini & Chaudhary, 2014), and as such has led to the new gainful employment regulations. Only time will tell if the new regulations will have a significant effect on enrollment and school numbers. Already many schools have closed due to not being able to meet the expectations of the gainful employment rule, but these were not necessarily the schools with dishonest practices.

Stress Management Self-Efficacy and Student Success

Studies may disagree over whether attending a vocational or for-profit college is more or less beneficial than attending an academic school, but many agree that the benefits differ from student to student. Hirschy et al. (2011) discussed major differences between students attending occupational schools versus those attending 2-year academic institutions regarding persistence. Hirschy et al. (2011) noted that in either case, students with self-efficacy, particularly the beliefs of those students who considered the challenges they faced to be within their control, were more likely to succeed than students who believed challenges and successes to be outside of their control. Regardless of the type of school attended, self-efficacy is beneficial for student success.

Social learning theory as proposed by Miller and Dollard (1941) and broadened by Bandura and Walters (1963), discussed the methods employed by individuals in acquiring new knowledge from another individual or group, including observation. Bandura (1978) described psychological functioning in social cognitive theory as a “continuous reciprocal interaction between behavior and its controlling conditions.” Rather than learning solely from actions and reactions, learning also occurs in other ways. Modeling is one of the main ways of learning, either intentionally or unintentionally, as it is both safer by not having to go through trial and error and is more effective due to being able to witness the behavior.

Bandura (1977) discussed the concept of self-efficacy as one aspect of social cognitive theory. Bandura (1977) increased knowledge of self-efficacy and claimed that it predicted performance success, by increasing the intensity levels and persistence of the effort that was made. Pajares (2002) further identified behavior, personal, and environmental factors as each affecting the other two, with self-efficacy providing one avenue of effect.

Self-efficacy has also been shown to affect multiple areas of behavior. Zimmerman et al. (1992) examined the relationship between self-efficacy and academic achievement and found that more successful students reported that they felt they were in charge of their time and made their own goals. This study by Zimmerman et al. (1992) provided the additional information to promote and expand the knowledge base of social cognitive theory.

Pajares (1996) examined self-efficacy, part of Bandura's (1986) social cognitive theory, as it relates to academic success, and found self-efficacy to be a strong predictor of academic success. Hackett, Betz, Casas, and Rocha-Singh (1992) studied both occupational and academic self-efficacy, as well as some additional factors, and how each relates to academic achievement and found academic self-efficacy to be the strongest predictor of academic achievement. Golden (2003) identified self-efficacy as one of the strongest predictors of academic success, and DeWitz and Walsh (2002) found that self-efficacy has a significantly positive effect on student satisfaction, which influences student retention. Self-efficacy is only one aspect of student success, and only some are types that can be treated or changed.

Similarly to self-efficacy, another important factor in student success is the level of self-confidence that an individual student has overall, in the education process, and in each specific area of study. Sheldrake (2016) studied the self-confidence levels of science students and found that although self-confidence was predicted by many factors, it was most strongly predicted by received praise, good grades and interest in science. Students with greater self-confidence reported a better ability in science, according to Sheldrake (2016), and those who had lower self-confidence reported a lower ability in science. Although this study focused on science, Sheldrake (2016) claimed that extrapolations could be made to other topics of study. While

many factors affect student success in higher education, the vast majority occur in advance of the students entering the higher education setting, according to a literature review performed by Kuh, Kinzie, Buckley, Bridges, and Hayek (2007). Not all areas that affect student success are detrimental, however, as many factors encourage success.

Hagedorn, Perrakis, and Maxwell (2007), identified different areas where schools inhibit or encourage student success. Recommendations from Hagedorn et al. (2007) included providing students with career counseling as well as places to meet up, study and find answers to their questions. Educational institutions can have a significant impact on the success or failure of their students.

Higher education schools should investigate where they can provide support and encouragement to improve retention and positively influence student success. Kuh et al. (2006) created a comprehensive report on student success and proposed early interventions and student success programs that provide connections to students. These interventions and programs should be directed towards helping students develop a connection to their area of study, their classmates, and to the school and its environment.

Connections help students to feel part of a group, which has been shown to increase retention and student success (Fowler & Boylan, 2010; Pritchard & Wilson, 2003). Chen, Lee, and Tsai (2010) examined the relationships between student learning styles, classroom behaviors, and academic achievement in students at a vocational school. They found that students who learned more effectively as a team had interactive classroom behavior, and higher academic achievements than those who preferred to learn on their own (Chen et al., 2010).

There are many types of interactive classroom behavior, and some may be harmful to the student's connections and ultimately to their success.

Chan and Weng (2016) studied the relationship between various kinds of interpersonal interactions, the motivations behind them, and the students' educational outcomes at technical colleges. Chan and Weng (2016) discussed the following three main categories of interactions: those related to curriculum, other education-based interactions, and noneducational types of interactions. The study showed that curriculum-based interactions were related to the students' grade point average (GPA) negatively, education-based interactions were positively related to GPA, and noneducation-based interactions predicted retention and graduation rates (Chan & Weng, 2016). Communication can encourage or discourage students depending on the type and the manner in which the communication was performed.

Negative communication has a significant effect on motivation. A study by Shih and Gaman (2001) examined how student achievement relates to student attitude, motivation and learning styles, and found that motivation most strongly predicted student achievement. Having a greater understanding of student motivation is a key aspect of student retention and student success. While motivation is an important aspect of student achievement, it is as important for an educational institution to be able to affect retention reliably.

Herzog (2006) claimed that it is essential for a school to be able to predict which students will leave school early, which will graduate on time, and which students will graduate late. This ability would provide important information for a school's enrollment department, as a greater understanding of which enrollee is more likely to succeed could inform enrollment policies and help a school to develop policies to assist those students who are more likely to drop out or

graduate late before it happens. Herzog (2006), however, stated that there is not an effective tool to predict this information, leaving schools unprepared for student retention issues. Improving methods of analyzing retention factors should be a priority for schools to improve student success.

Understanding why some students stay and some leave is more than just about providing connections and interventions, however, as some students are not ready or able to follow the educational path. A study conducted by Zepke, Isaacs, and Leach (2009) examined student retention and found that those students who remained in school were those who were able to respect the teachers' authority and conform to the school rules and code of conduct. Zepke et al. (2009) also found that those who did not respect the authority of the teachers and did not follow classroom rules, or the code of conduct were more likely to leave the university early.

For students that are ready for college, it is important to retain them in school so that they can achieve their goals. A longitudinal study by Chemers, Hu, and Garcia (2001) followed first-year college students examining the relationship between self-efficacy and retention and found that academic self-efficacy strongly predicted retention. A study by Torres and Solberg (2001) identified relationships in college students of persistence intentions and health, with self-efficacy, stress, family support, and social integration. Torres and Solberg (2001) found that self-efficacy strongly predicted persistence intentions.

It is important for a school to be aware of other factors that affect retention as well. Green (2008) claimed that an important method of increasing student retention is to provide a learning environment that promotes student engagement in the classroom. Environment plays a

key role in retention and promoting those types that lead to increases in retention benefits the school, the students, and the workforce.

Student success in technical schools. Providing students with a student success program has been shown to be beneficial in some situations, and unsuccessful in others (Claybrooks & Taylor, 2016; Pritchard & Wilson, 2003). Claybrooks and Taylor (2016) examined the relationship between a college success course and student persistence in a for-profit school. Claybrooks and Taylor (2016) found that there was not a significant difference in student persistence between those students required to take the course and those who were not required to do so. Finding a program that benefits the students is necessary to promote success.

The most important aspect of the education process, however, is the result, employment. Stajkovic and Luthans (2002) discussed the contributions of self-efficacy on both work performance and work motivation. The authors claimed self-efficacy to be more of a predictor of one's performance at work than either job satisfaction or the Big Five personality traits. In work motivation, self-efficacy gives the employee the confidence, according to Stajkovic and Luthans (2002), that they can do what is required even in difficult situations. Successfully getting into the students' chosen career field takes more than just academic achievements, though, depending on the career.

Gainful employment in their chosen career field is the goal for the majority of students, and many factors affect the ability of the student to acquire and keep a job. Usoff and Feldmann (1998) surveyed technical students and found that the students themselves, did not fully appreciate the importance placed on technical skills by their future employers. Technical skills

are valuable, as knowing how to do the job is an essential part of being employed, but they are not the only skills necessary.

Husain, Mokhtar, Ahmad, and Mustapha (2010), surveyed employers and found that they felt employability skills were highly important for college graduates to be competitive in the job market. Employability skills involve more than just technical skills and include such areas as professionalism, responsibility, dependability, and being able to get along well with others. Students must find, and finish, an educational program that helps them obtain the position they are looking to acquire. Sandler (2000) identified career decision-making self-efficacy (CDMSE) as an additional aspect of student persistence and found that CDMSE had a significant effect on student persistence. To address concerns in this area, institutions, according to Sandler (2000), must provide additional training to enable students to improve their CDMSE, as well as link to their future career to ensure a more thorough understanding. A better idea of the career they are striving for is an important part of preparing for their future employment.

A study performed by Shearer (2009), found that students with low intrapersonal intelligence, as scored by the Multiple Intelligences Developmental Assessment Scales (MIDAS; Shearer, 2007), were more likely to be unsure about their career path. Shearer (2009) also found that being unsure about one's career path has been associated with decreased persistence (Restubog, Florentino & Garcia, 2010). Peer groups were shown by Kiuru, N., Koivisto, P., Mutanen, P., Vuori, J., Nurmi, J.-E. (2010) to significantly affect preparation for a future career, including influencing career choices and the effort made in planning for their career.

To better help prepare students of all backgrounds and skills for their chosen career, a preparation program or intervention must be flexible. Renn, Steinbauer, Taylor, and Detwiler

(2014) performed a study utilizing student mentors from the students' future careers to prepare students for the transition from school to work and found that the mentoring was positively related to student career planning. A study by Masonati, Lamamra, and Jordan (2010), showed that most students that dropped out of vocational training had issues with transitioning from school-to-work, while Siegel and Sleeter (1991) suggested that thorough preparation for the school-to-work transition should begin in early childhood education.

Kuijpers, Meijers, and Gundy (2010) studied the relationships between various learning environments designed to improve career competency, and career competencies. Kuijpers et al. (2010) found that the type of environment that was most strongly associated with career competency was that which focused on real-life work experience and the student's future career. Focusing an educational process on real-world experiences helps a student to prepare for the actual workplace.

Suleman (2016) examined literature discussing what schools should know about the skills their students need to be employed and found that although most studies showed that graduates needed communication, teamwork, and interpersonal skills, studies did not agree on any concrete skills. Also, according to Suleman (2016), employers surveyed found graduates, in general, to be ill-prepared for the workplace, leaving a considerable gap in the knowledge base regarding areas in which to provide increased future focus. Nurmi et al.(2002) found that the more that students focused on work-related goals in a vocational school, the more likely they were to find and retain a job correlating with their education. According to Nurmi et al. (2002), those students who focused less on work-related goals, were more likely to switch careers or to be

unemployed. Nurmi et al. (2002) also found that those students, who achieved their work-related goals, increased their confidence in achieving future goals.

Stress Mindset and Student Success

Yeager and Dweck (2012) studied mindsets that promote resilience, as opposed to those that are more likely to lead to giving up and found that students who are taught that educational skills are learned as opposed to innate have increased academic performance. According to Yeager and Dweck (2012), students do not need to be praised or berated as much as they need to be challenged in ways that they must put forth an effort to overcome and succeed. Providing challenges that can be accomplished is an important aspect of the education process, as people learn more effectively when they overcome challenges.

One factor that has an impact on many different areas is stress. Keller et al. (2012) studied the relationship between stress, the perception that stress affects health, and health outcomes, and found that many adults believe that stress affects their health. Additionally, Keller et al. (2012) determined that those who reported elevated stress and believed that elevated stress harms health had a 43% increased premature death risk over those who had reported elevated stress but without the belief that stress was harmful. Keller et al. (2012) also claimed that moving past stressful events builds resiliency, which in turn fosters the belief that future stressors will not cause harm. Believing stress is harmful or not affects the body in one way or another.

Ursin and Eriksen (2004) developed CATS which describes how various types of stressors affect the body by sending physiological signals via the body's alarm system. According to Ursin and Eriksen (2004), the greater the alarm, the greater the signal sent, and

therefore, the greater the effect that it has on the body. When the expectation of the stress outcome is positive, there is no health risk. When the outcome of the stressor is expected to be negative, the risk to health increases if the individual lacks coping skills or if the stress load remains elevated for a long period (Ursin & Eriksen, 2004). Although there are many other aspects, the risk to health is an important factor of stress.

Although Crum, Salovey, and Achor (2008) found that stress mindset did not predict work performance, it did predict areas health and life satisfaction, including social and avoidance coping. However, Crum et al. (2008) found that when the stress mindset was addressed positively, improvements in work performance and psychological symptoms were noticed, but negative conditioning did not decrease work performance or psychological symptoms. Crum et al. (2008) determined this finding to be due to negative stress mindset being the predominant mindset. With negative stress mindset being the predominant view, and the effect that negative stress mindset can have on health and life satisfaction, changing to a positive stress mindset could improve these areas of life.

Mindsets have been shown to have a profound effect on various areas. Bayer and Gollwitzer (2005) studied various types of mindsets and found that regardless of the type, people who consider themselves strong in a particular mindset are more interested in positive information about that mindset, rather than negative aspects. Those who consider themselves weak in that area, instead search out information that hampers growth or improvement, according to Bayer and Gollwitzer (2005). This information seeking behavior leads those who consider themselves strong to get stronger and those who feel weak to get weaker. This

information correlates with positive stress mindsets improving health and happiness while those with negative stress mindsets often continue to have poor health or decreased happiness.

Stress Management Self-Efficacy, Stress Mindset, and Student Success

In a study, Sawatzky et al. (2012) examined the relationship between stress and depression in students, as mediated by stress management self-efficacy, and found that stress management self-efficacy was able to partially mediate depression in students depending on the levels of the stress experienced by the students. Sawatzky et al. (2012) suggested providing training students in stress management could alleviate some stress and depression in college students. Many stress management training programs include having the participants practice changing their viewpoint until it is a habit, or it becomes part of their normal way of life.

Brooks (2014) conducted a study that examined the effects of a treatment where the participants were instructed to look at pre-performance anxiety as excitement for an upcoming challenge, rather than anxiety for an upcoming threat. Brooks (2014) found that getting excited about a challenge, rather than trying to calm anxiety down, led to a significant improvement in performance. Changing one's mindset may be difficult for many to do, but the benefits are widespread.

Jacobshagan, Rigotti, Semner, and Mohr (2009) studied the effects of adolescent school-related stressors, including student rivalry, the pressure to perform well, and the school environment. Jacobshagan et al. (2009) found that self-efficacy moderated the stressors of both rivalry and pressure to perform but had an insignificant effect on the stressor of the school environment. Stress management training should start with teachers, according to Jacobshagan et al. (2009), who claimed that teachers need to be aware of major student stressors, as well as

thoroughly trained in stress management techniques. Jacobshagan et al. (2009) also argued that schools must both provide and support the training to ensure that the stress management is effective. Training is not effective if it is not well supported by management.

There are many mindfulness types of training and many areas where it can be implemented. Leland (2015) argued that mindfulness training should be implemented in every type of education setting to increase student success. Leland (2015) found that mindfulness instruction leads to increased academic performance, improved behavior, and better job preparedness. Mindfulness training is yet another area where a school could more effectively help their students to achieve their goals.

Another important aspect of student success is the effect of stress on students. A study performed by Zajacova, Lynch, and Espenshade (2005) looked at the effect of perceived stress on the academic success of nontraditional college freshmen and found that although academic self-efficacy is a better predictor of first-year grades, perceived stress factors more into persistence and attrition with a positive correlation. Perception is a significant factor in stress, as only the student can ultimately decide what their level of stress is at any given time or in any specific situation.

Stress can be mediated, however, and individuals mediate their stress in their own way. Dietrich, Jokisaari, and Nurmi (2012) found that those who believed their goals were attainable, important, and that they were making progress with those goals experienced less perceived stress than those who perceived the goals as unattainable, unimportant, or that they were not making progress. Student success in college is important to graduate, but generally, the end goal of students is employment in their field of study.

Predictors of Gainful Employment after Graduation

Many factors affect even a successful student's ability to acquire gainful employment. Guan et al. (2014) claimed that university graduates that were more clear about their future, were more adaptable, had higher beliefs of self-efficacy in searching for a job, and were more employable, than those who were unsure about their future lives. Studies of students with self-defeating behavior in college, such as procrastination, impulsiveness, and failing to network (Boswell, Zimmerman, & Swider, 2012; Kanfer, Wanberg, & Kantrowitz, 2001; Wanberg, Zhu, Kanfer, & Zhang, 2012) and found these behaviors decreased employability.

Renn, Steinbauer, Taylor and Detwiler (2014) also studied these self-defeating student behaviors but found that employability could be increased by utilizing a student mentor to help the students overcome these behaviors. Chen and Lim (2012) identified the benefits of using a problem-focused coping strategy as preparation for the job search process as opposed to focusing on the search itself. Utilizing a positive stress mindset approach, as described in CATS is a problem-focused strategy that will increase employability. How can students become more aware of the employability skills needed, and where their deficiencies are if any? Marais and Perkins (2012) studied the initiative for increased employability with a group of graduate students and found that developing a strategy to improve the self-assessment ability of students was beneficial in assisting them to a greater understanding of their employability. Self-assessments are only effective if the assessors are completely honest with themselves, as self-assessment is yet another aspect of perception.

Qenani et al. (2014) examined students' self-perception of their employability and identified aspects that increased this self-perception of employability. The study found that

students who believe that they are capable of self-management are greatly more likely to have increased self-perception of employability (Qenani et al., 2014). Additionally, Valitova, Starodubster, and Goryanova (2015), stressed the importance of student self-determination and employability and claimed that schools should provide increased training to improve students' employability.

Summary and Conclusions

Two theories were used for this study, SCT and CATS. The first, SCT, explains the process where individuals learn and develop new skills and behaviors. The three main factors of behavior, people, and environment continually interact, affect, and influence each other. While there are many aspects of SCT, this study utilizes three main concepts, modeling, self-efficacy, and agentic theory, as well as a subset of self-efficacy, stress management self-efficacy.

Modeling is the manner in which people demonstrate a skill or observe another demonstrating a skill. This modeling can be done verbally, either written or oral, as well as visually. While the learning of some concepts may be easier using one method or the other, some observers also learn more quickly using one method or the other. In an educational environment, models, especially teachers, should demonstrate new skills and behaviors using multiple methods.

Self-efficacy is the level of a person's belief in their ability to perform a particular task, skills, or behavior. This belief is acquired from previous personal or observed experiences, feedback from others, and their individual's physiological state, and affects multiple aspects of the educational experience. In an academic setting, students with high levels of self-efficacy have higher test scores and are more likely to finish their schooling than those with low levels of

self-efficacy. Self-efficacy is a belief that should be encouraged to increase a student's ability to succeed in a technical school.

Agentic theory is the component of SCT that identifies areas of self-regulation. People can choose, consciously or subconsciously to employ or not employ a learned skill for multiple reasons, or in various situations. Goal setting is one aspect of agentic theory that is important in an educational setting, as it has been shown to improve academic performance. For technical schools concerned with improving student retention, encouraging goal setting for students also increases the likelihood that a student will remain in the program.

Stress management self-efficacy is the subset of self-efficacy in SCT that specifically pertains to an individual's perceived ability to handle stress. As with the main area of self-efficacy, stress management self-efficacy is affected by previous personal or observed experiences, feedback from others, and the individual's physiological state. The academic setting has multiple aspects that produce increased stress on students, especially new student, and the increased stress can build up over time for all students. People with higher levels of stress management self-efficacy beliefs are more effective at managing stress than those with lower stress management self-efficacy levels. Students who are more capable of managing their stress levels are more successful in school and work than those who are less capable. Technical schools, therefore, should place significant focus on helping students become more confident in their ability to handle their stress levels.

The second theory used to frame this study is the CATS. This theory describes the system or alarms and responses by which stress functions in the human body and identified how stress affects health and disease. The word stress can have multiple meanings as it is used to

describe both perceived stress in all its forms, as well the body's stress responses. CATS identifies the mechanisms by which the body handles stress.

While studies have looked at how positive stress mindset and stress management self-efficacy affects student success in community colleges and universities, little research has been done in vocational schools in these areas. Students choosing to attend community colleges and universities typically have differing goals and backgrounds than those who choose vocational school programs. Therefore, a greater understanding of these students will fill the knowledge gap in how student success in technical schools is affected by their levels of stress management self-efficacy and stress mindset.

Studies have also not yet identified how a positive stress mindset and stress management self-efficacy affect vocational students' ability to obtain gainful employment. In Chapter 3, I will identify how this study fills the gap in knowledge by analyzing graduate survey responses in a multiple logistic regression to determine the effect of a positive stress mindset and stress management self-efficacy on vocational students' ability to obtain gainful employment.

Chapter 3: Research Method

The purpose of this study is to empirically evaluate whether (a) levels of student perception of stress management self-efficacy is significantly associated with an increase of gainful employment in vocational school graduates, (b) levels of student perception of stress mindset is significantly associated with an increase in gainful employment in technical school graduates. One major problem facing higher education is student success. All schools, to keep financially solvent, need their students to enroll and stay in school. Vocational, technical, and other for-profit schools must follow a recent law, the Gainful Employment Rule (United States Department of Education, 2015), which requires those types of schools to demonstrate that their students not only graduate from their program of study but also acquire a career in their chosen field. This law requires that graduates acquire a position in their field where the pay is enough so that their school loan payment is at or lower than 20% of their available income after bills or 8% of their total income.

Voight and Ajinka (2015) asserted that student success is an important, but not well-addressed, part of education and that more focus needs to be put on making sure that students can reach their goals. For-profit schools, with this new law, must be vigilant in ensuring that student success is their priority and that their student success programs are successful in helping students graduate and find gainful employment in their field. To accomplish this task, schools must be knowledgeable about areas that cause student and graduation failure.

Many areas affect student success in schools, and it is an area that has been studied in both universities and community colleges, but there is a significant lack of information on student success in for-profit school settings. Therefore, this research study looked at student

success of technical students. The ability to handle stress is one aspect of student success that has been shown to affect both student success in universities (Sawatsky et al., 2012), and employability rates of graduates (Wye & Lim, 2009). Positive stress mindset has been identified by Crum et al. (2013) as an important mechanism in improving student success at the university level. As research has not been done on the stress management self-efficacy or the stress mindset of vocational students, this study focused on the influence of stress management self-efficacy and stress mindset on gainful employment for these graduates.

Research Design and Rationale

As a quantitative study, this study used a cross-sectional survey method to determine (a) whether stress management self-efficacy significantly increases the likelihood of gainful employment in vocational school students, (b) whether stress mindset significantly increases the likelihood of gainful employment in vocational school graduates, and (c) whether stress management self-efficacy and stress mindset significantly increases the likelihood of gainful employment in vocational school graduates. A logistic regression and a multiple logistic regression analysis, with categorical dependent/criterion variables (gainful employment versus not) and continuous predictor variables (stress management self-efficacy, stress mindset) was utilized.

Cross-sectional studies gather information from the participants at a specific point in time while longitudinal studies track participants over a particular period, and cross-sectional studies utilizing multiple logistic regressions, according to Barros and Hirakata (2003), are effective and less prone to errors than many other methods such as longitudinal studies. Multiple logistic regressions, according to George and Mallery (2010) identify how independent variables affect

dependent variables, making them an appropriate choice for this study. Also, Lindell and Whitney (2001) claimed that cross-sectional studies were most effective when ensuring an adjustment for possible errors related to common method variances before collecting the data, while Richardson, Simmering, and Sturman (2009) discussed methods for adjusting after the collection of data.

This study is regarding stress mindset and stress management self-efficacy as perceived and reported by the participants. It utilized a cross-sectional survey method to acquire this information. A qualitative study is not appropriate for this study as it is designed to predict relationships rather than identifying or describing them. An experimental study is also not appropriate for this study as it is designed to predict the relationships rather than manipulate them.

The variables investigated by this study include two predictor variables and one dependent variable. The first predictor variable is stress management self-efficacy, and the second is stress mindset, while the dependent, or criterion variable is that of whether the participant is gainfully employed in their field of study. Stress management self-efficacy is operationally defined as measured by the participant's mean score on Jin's (2010) SMSEM, (see Appendix A). Stress mindset is operationally defined as measured by the participant's mean score on Crum et al. (2013), SMM, (see Appendix B). Gainful employment is operationally defined as acquiring a position in the participant's field of study, which pays enough that their loan payment is less than eight percent of their total income or less than 20 percent of their disposable income.

Methodology

Population

For this study, I collected a sample of 66 students who had completed a course of study at a vocational school with 4 campuses located in the states of New Mexico and Colorado. Based upon a 2015 report, this technical school had a 79% (1067 out of 1351) graduation rate (StateUniversity.com, 2019). The student totals for 2015, according to StateUniversity.com (2019), were 2351, while the placement rate was 1928, or 82.01% of graduates. According to Hsieh, Block, and Larsen (1998), a sample of 66 participants provides for an effect size of .15 with a power level of .80 and a probability level of .05 for a multiple logistic regression with two predictors. This effect size, power level, and probability level is appropriate, according to Frankfort-Nachmias and Nachmias (2008) and is a reasonable number of participants to acquire.

Sampling and Sampling Procedures

Because the study involves a specific section of the student population (those who have already finished the program), I utilized a nonrandomized, convenience sampling method. This method, according to Acharya, Prakash, Saxena, and Nigam (2013), is the most commonly used method of obtaining a sample of a specific set of knowledge experts. As graduates of vocational school programs are the most knowledgeable of their stress management self-efficacy and stress mindset, this population will be sampled.

Procedures for Recruitment, Participation, and Data Collection

Due to the need to accommodate for institutional preferences, the link to the survey on Survey Monkey was provided by email to each graduate, except those from the campus where I work. When accessing the survey link, the graduates were first provided an informed consent, as

shown in Appendix C. This informed consent, following the requirements of Section 8.02a of the Ethical Principles of Psychologists and Code of Conduct (American Psychological Association [APA], 2016), instructed participants of the limits of confidentiality of the study, and their rights to either decline the research study or withdraw from the study.

Those who declined to participate in the study were taken directly to a link that thanked them for their time. Participants were also informed that participation was voluntary and noncompensatory. The participants' debriefing included a point of contact for the study in case they had any questions or concerns and informed them of the purpose of the research study. Participants were also informed that the research was designed to benefit future students and described how and when the results would be disseminated.

Instrumentation and Operationalization of Constructs

The two instruments utilized by this research study were Jin's (2010) SMSEM, (see Appendix A), and Crum et al. (2013) SMM, (see Appendix B). The SMSEM is designed to assess participants' perception of their own ability to handle and manage stress, which is an essential aspect of this study as it represents one of the two independent variables. I utilized this measure to analyze how the participants felt they were able to handle stress to identify the effect that the ability or lack of ability to handle stress has on vocational student success.

The SMSEM is a 10-question Likert-type scale created by Jin in 2010, to identify the ability of college students to handle the stress that occurs as part of the college experience. Permission was received for utilizing the measure in this research study and is documented in Appendix D. The SMSEM was shown by Jin (2010) to have a Cronbach's α of .83 and was used to assess the participants' perception of their stress management self-efficacy, or their own

ability to handle stress under various circumstances and in different situations. The SMSEM was normed using a sample of 60 college students from a university in the United States with a mean age of 20.43 ($M = 20.43$, $SD = 2.72$). For this measure, participants were asked to select their perceived confidence level for each item on a scale with one point increments, from 1 (very strongly disagree) to 10 (very strongly agree), and the means taken for all the answers, with an expected range of between 1 and 10. Higher level scores indicate that the individuals perceive themselves to be able to handle the stress they encounter more effectively than those individuals with lower scores.

The other instrument, the SMM (in Appendix B), an eight-question Likert-type scale, represents the second of the two independent variables and was chosen for its ability to identify the participants' viewpoints on how stress affects them in various areas, in either positive or negative ways. Crum et al. created this measure in 2013 to assess the extent to which an individual embraces the belief that the effects of stress contribute in a positively or negatively in various areas of their life. Participants were asked to select their belief of various aspects of stress on a scale with one-point increments, from 0 (very strongly disagree) to 4 (very strongly agree), and the means taken for all the answers, with an expected range of between 0 and 4. Higher level scores indicate that the individuals have a more positive outlook in regards to the effects of stress than those with lower scores.

Permission to use this instrument has been provided and is documented in Appendix E. Crum et al. (2013) performed a study designed to establish reliability for this measure, resulting in a Cronbach's α of .86 with a normal distribution for the general version used in this study. Crum et al. (2013) determined the consistency of this measure by administering the scale in three

separate pilot studies. The first pilot study was performed during a parenting workshop, and participants were asked to assist with rewording, leading to a refinement of the measure after this first pilot study (Crum et al., 2013). The second pilot study was administered to 26 participants at a conflict management-training seminar, which led to a reduction of the measure after finding two questions were not effective. The third pilot study was performed on 40 government employees with a mean age of 48 and composed of a population that was 42% male, 77.8% white, 13.9% African American, 5.6% Hispanic, and 2.8% Asian.

Finally, the SMM was administered to 388 employees of a financial institute in the United States that was undergoing significant downsizing and restructuring, leading to probable impending stressful situations. The mean age was 38.49 ($SD = 8.40$), and matching the company's demographics, 54% of the participants were male. The majority were White/Caucasian (71.7%), along with Asian (15.8%), Hispanic (6.4%), Black/African American (2.4%), and other (3.7%). Additional research was performed using the SMM with Cronbach $\alpha = .85$ (Crum, Akinola, Martin, & Fath, 2017), thus providing validity to the measure.

Respondents were also asked to report both their salary and their loan repayment amounts, based on the operationalization of the dependent variable of gainful employment. The operational definition of gainful employment is as follows: (a) having a job in their field of study, (b) having a job that pays an amount so that their loan payments are less than eight percent of their total income or less than 20 percent of their disposable income. Participants responded to a (a) dichotomous question to the above definitions, (b) as well as provided information about their annual salary and loan payments. This information was used to determine gainful employment, by dividing the annual salary by 12 to get the monthly salary and dividing that by

the monthly loan payment. The remaining number was the percent of the salary that was put towards their loan payments. If this number was less than eight percent, then that graduate was gainfully employed.

Data Analysis Plan

The Statistical Package for Social Sciences (SPSS) software was used for the data analysis for this study. Descriptive statistics were conducted to deliver information regarding the participant's levels of stress management self-efficacy and stress mindset and included demographic variables to identify any significance in the differences between the categories of gender, ethnicity, and age. The analysis was completed using a multiple logistic regression.

This study examined two independent variables, stress-management self-efficacy and stress mindset. The independent variables, or predictor variables, are operationally defined as follows: (a) self-efficacy as measured by the mean score on Jin's (2010) SMSEM, (b) stress mindset as measured by the mean score on Crum et al. (2013) SMM. The dependent variable, or criterion variable, of success for this research study, is operationally defined as being gainfully employed in their field of study. Gainfully employed includes acquiring a position in the participant's field of study, which pays enough that their loan payment is less than 8% of their total income, or less than 20% of their disposable income (yes or no).

The following research questions are of interest and the hypothesis for each one is stated.

The following research questions and their hypotheses were tested:

Research Question 1: Does stress management self-efficacy significantly increase the likelihood of gainful employment in vocational school graduates?

H_01 : Stress management self-efficacy, as measured by the Stress Management Self-Efficacy Measure, will not be associated with an increased likelihood of success, as determined by gainful employment status, in vocational school graduates.

H_11 : Stress management self-efficacy, as measured by the Stress Management Self-Efficacy Measure, will be associated with an increased likelihood of success, as determined by gainful employment status, in vocational school graduates.

Research Question 2: Does stress mindset significantly increase the likelihood of gainful employment in vocational school graduates?

H_02 : Stress mindset, as measured by the Stress Mindset Measure, will not be associated with an increased likelihood of success, as determined by gainful employment status, in vocational school graduates.

H_12 : Stress mindset, as measured by the Stress Mindset Measure, will be associated with an increased likelihood of success, as determined by gainful employment status, in vocational school graduates.

Research Question 3: Do stress management self-efficacy and stress mindset significantly increase the likelihood of gainful employment in vocational school graduates?

H_03 : Stress management self-efficacy and stress mindset, as measured by both the Stress Management Self-Efficacy Measure and the Stress Mindset Measure, will not be associated with an increased likelihood of success, as determined by gainful employment status in vocational school graduates.

H_13 : Stress management self-efficacy and stress mindset, as measured by both the Stress Management Self-Efficacy Measure and the Stress Mindset Measure, will be associated with an

increased likelihood of success, as determined by gainful employment status in vocational school graduates.

To test these research hypotheses, I used SPSS Statistics Standard to conduct the analysis with a multiple logistic regression to analyze the impact of stress management self-efficacy on gainfully employed and not gainfully employed graduate participants by using the mean scores on the SMSEM. Multiple logistic regressions are done, according to George and Mallery (2010), when there are two independent variables and one categorical dependent variable.

According to Dayton (1992), logistic regression is to be used to extend the function of multiple regression analysis to assist in situations where the dependent variable is dichotomous. As the dependent variable in this study is whether the participant is gainfully employed, a logistic regression analysis is the most appropriate statistical method for the dependent variable. Logistic regressions also make no assumptions about the distribution of the independent variables, so they are an appropriate statistical method for the independent variables as well.

The pertinence of utilizing a multiple logistic regression is based on ensuring that the assumptions are met. One assumption is that the dependent variable is dichotomous, as in that it has two values (Burns & Burns, 2009). The second assumption, according to Burns and Burns (2009), is that a relationship is likely, so the dependent must be coded specifically. The dependent variable, in this study, was coded as 2 for not gainfully employed (not working in a position in the graduate's field of study with a salary which pays enough so that their loan payment is less than 8% of their total income or less than 20% of their disposable income), and 1 for gainfully employed (working in a position in the graduate's field of study with a salary which pays enough so that their loan payment is less than 8% of their total income or less than 20% of

their disposable income). The third assumption is that the sample size is large enough, and 66 samples is beyond the 10 samples per independent variable recommended by Burns and Burns (2009). The fourth assumption is that the independent variables are also independent of each other and that the data do not show multicollinearity, between each independent variable. To test this assumption, I examined the results for variance inflation factors above 2.50. If that had existed, the assumption would not have been met, and I would have removed one of the independent variables (Stoltzfus, 2011).

Threats to Validity

External Validity

Onwuegbuzie (2000) claimed that identifying possible threats to validity is important for research integrity to confidently generalize the results and apply towards real-world situations. External validity is being able to generalize the information acquired across other populations and settings as well as the currently studied population and setting. Threats to external validity must be acknowledged to avoid errors in generalization.

Specifically, in the current study, the most likely threat to external validity is possible sampling error. There could be many differences between my sample and what else exists in the population targeted by the study. The descriptive statistics of this sample were benchmarked against that of the population after the data is collected. This study was intended to identify how well stress management self-efficacy and stress mindsets of vocational graduates predicts their employability, and there was no reason to believe that this sample would be significantly

different than that at other vocational schools. However, it is acknowledged that the study cannot be generalized to each vocational graduate, nor a specific vocational program or school.

Internal Validity

Internal validity indicates whether the research was performed correctly, contains minimal design errors, and notes that the results are accurate. A study that has internal validity, according to Brewer (2000), signifies that the independent variables caused the changes in the dependent variable. Slack and Draugalis (2001) identified the following eight threats to internal validity: (a) history, when the passage of time possibly affects the results, (b) maturation, when the subjects change physically or psychologically throughout a long-term study, (c) testing, when changes in test scores are due to outside influences rather than the intervention, (d) instrumentation, when results are affected by differences in instrument usage or observation, (e) regression, where poor selection of participants as recruited those with the extreme scores, (f) differential selection, where portions of the participants are treated slightly differently than others, (g) experimental mortality, where there is a significant attrition rate, and (h) selection interaction, where the validity threat of selection is compounded by another threat, usually selection maturation.

Several of these things, including variables left out of the study, errors in measurement of the independent variables, and selection errors, can cause threats to internal validity in this logistic regression study. The internal validity threat of omitted variables may be eliminated by being clear about which independent variables are utilized and why those were chosen. Errors in measurement of the independent variables and selection errors are both resolved by implementing only one researcher, and by closely following the instructions of the instrument

designer. Additionally, although other variables may contribute to the dependent variable, this study was able to identify the percent of the variance in gainful employment that could be attributed to the predictors.

Construct Validity

Construct validity occurs when the instrument measures precisely what is intended to measure. MacKenzie (2003) claimed that the most important aspect of a solid construct is to have a clear understanding of what is being measured, and how it is being measured. In the current research study, I utilized two measures that had each already been previously designed and used for similar research to combat this threat to construct validity. Another threat to construct validity according to Cook and Campbell (1979) is found in operational definitions that are not defined. I avoided this problem by using objective operational definitions that were distinctly expressed to minimize the possibility of errors in interpretation.

Ethical Procedures

Approval was requested and received from Walden's Institute Review Board (IRB) for the current research study (approval # 10-05-18-0335948). According to the APA guidelines, I took steps to ensure the safety and wellbeing of my participants regarding their participation in this study. During the informed consent, I advised the participants of their choice to withdraw from participating at any time, and without repercussions of any type.

Although Sarantakos (2005) stressed the importance of ensuring that participants are fully informed of the nature and purpose of the study, this was provided after the participants' answers had all been submitted to not affect their responses. This part of the survey also included my email address so that participants could discuss any other questions they might

have. The survey was sent from the school from which they had just graduated, but the informed consent included the knowledge that they were not in any way obligated to take the survey.

Participant anonymity was preserved throughout the study by utilizing a web link that does not register IP addresses (Survey Monkey) and did not require the participants to create identifiers such as usernames or passwords. Once the survey was accessed and participant responses recorded, I transferred the data for each of the instruments as well as the loan and employment status of the participants into an Excel spreadsheet, and uploaded it into SPSS.

Following the analysis of the data, I have stored both the raw and analyses data on a dedicated external hard drive with access restricted by an administrator lock that is password protected. I am the only one with access to the data, and I will keep the data securely in this manner until five years have passed, or until Walden University requests that the data is destroyed, whichever comes first.

There are a few areas of concern for the IRB, including the fact that the participants were recruited from my employer, but I recruited participants from other campuses that I have never worked at and from prior students on which I have not had any interactions or influence.

Summary

In Chapter 3, I discussed the design of the current study which provided the answers to my research questions, the results of which will be seen in the following chapter. Due to the increased use of technology in vocational students (Rojewski, 2002), the web-based survey link was sent by email to graduate students to increase the participation rates. I provided the participants with two measures, the SMSEM (Jin, 2010) and the SMM (Crum et al., 2013),

which are both empirically validated measures that have been shown to provide reliable data in multiple research areas.

After collecting the data, I conducted a logistic regression and a multiple logistic regression using SPSS to determine if either stress management self-efficacy, stress mindset or both are significant predictors of employability. To address ethical concerns and provide safety for the participants according to the APA guidelines (APA, 2010), thorough informed consent and researcher and participant follow-up communication avenues were provided to the participants, as well as information regarding the purpose of the study. The survey also included the use of skip logic so that the participant, upon consent, proceeded to the measures, and if the participant did not consent, he or she was taken directly to the end of the survey and thanked for their time.

Chapter 4 will include information regarding the timeframe and participation recruitment of the data collection process, and how the sample collected provided a representative sample of the population. This coming chapter will also include the results of the research, the statistical analyses, and tables to effectively illustrate the interpretation of the data. This chapter will describe the relationships between stress management self-efficacy, stress mindset, and the employability of graduates from a vocational school.

Chapter 4: Results

The purpose of this study was to empirically study whether (a) levels of student perception of stress management self-efficacy is significantly associated with an increase of gainful employment in technical school graduates, (b) levels of student perception of stress mindset is significantly associated with an increase in gainful employment in vocational school graduates. This quantitative study investigated whether the dependent variable of gainful employment is influenced by the student's levels of stress-management self-efficacy and stress mindset. The first independent variable is operationally defined in this study as self-efficacy as measured by the mean score on Jin's (2010) SMSEM, (see Appendix A). The second independent variable is operationally defined in this study as stress mindset as measured by the mean score on Crum et al. (2013) SMM, (see Appendix B). The dependent variable, or criterion variable, of gainful employment for this research study, is operationally defined as (1) having a job in their field of study, (2) having a job that pays an amount so that their loan payments are less than 8% of their total income or less than 20% of their disposable income. Participants responded to a (a) dichotomous question to the above definitions, (b) as well as provided information about their salary and loan payment/s.

Although graduation is the expected outcome of completing technical school, more importantly from the student's point of view, is the expectation of gainful employment. I compared the results of a graduate survey identifying levels of perceived stress management self-efficacy and a graduate survey identifying levels of perceived stress mindset with the employment status of the graduate and performed a multiple logistic regression to determine how each aspect affects employability.

The following research questions and their hypotheses were tested:

Research Question 1: Does stress management self-efficacy significantly increase the likelihood of gainful employment in vocational school graduates?

H_01 : Stress management self-efficacy, as measured by the Stress Management Self-Efficacy Measure, will not be associated with an increased likelihood of success, as determined by gainful employment status, in vocational school graduates.

H_11 : Stress management self-efficacy, as measured by the Stress Management Self-Efficacy Measure, will be associated with an increased likelihood of success, as determined by gainful employment status, in vocational school graduates.

Research Question 2: Does stress mindset significantly increase the likelihood of gainful employment in vocational school graduates?

H_02 : Stress mindset, as measured by the Stress Mindset Measure, will not be associated with an increased likelihood of success, as determined by gainful employment status, in vocational school graduates.

H_12 : Stress mindset, as measured by the Stress Mindset Measure, will be associated with an increased likelihood of success, as determined by gainful employment status, in vocational school graduates.

Research Question 3: Do stress management self-efficacy and stress mindset significantly increase the likelihood of gainful employment in vocational school graduates?

H_03 : Stress management self-efficacy and stress mindset, as measured by both the Stress Management Self-Efficacy Measure and the Stress Mindset Measure, will not be associated with

an increased likelihood of success, as determined by gainful employment status in vocational school graduates.

H₁₃: Stress management self-efficacy and stress mindset, as measured by both the Stress Management Self-Efficacy Measure and the Stress Mindset Measure, will be associated with an increased likelihood of success, as determined by gainful employment status in vocational school graduates.

Data Collection

Data collection began October 12, 2018 and concluded on December 16, 2018. A total of 73 participants were recruited from graduates over the previous 12-month period, from two campuses of a vocational school with four separate campuses. Based upon a 2015 report, this technical school had a 79% (1067 out of 1351) graduation rate (StateUniversity.com, 2019). The student totals for 2015, according to StateUniversity.com (2019) were 2351, while the placement rate was 1928, or 82.01% of graduates. Although age, gender and campus location were not considered factors in predicting gainful employment, they were included in the demographic questionnaire.

Demographic information was collected from participants that included gender, age, graduation date, campus location, employment status, hourly wage, typical work week hours, and monthly loan payment. The hourly wage, typical work week hours, and monthly loan payment amounts were utilized to determine gainful employment, which is that the loan payment amounts be equal to or less than eight percent of the graduate's total wages.

Surveys were sent via SurveyMonkey to 389 individuals that fit the criteria for inclusion of having graduated within the year from a vocational school. The surveys were sent multiple

times to increase response rate. Any missing data on the measures or demographics led to the exclusion of that respondent. One participant did not complete either the SMSEM or the SMM, and the remaining six participants that were eliminated did not complete the employment, wages, and/or loan payment sections. Of the 73 respondents, 7 were eliminated due to not completing the survey. The final sample was composed of 66 ($N=66$) or a 17% response rate. Participant demographics are displayed in Table 1.

Table 1

Demographic Characteristics of the Sample (N=66) for Age, Gender, Employment Status, Hourly Wage, Typical Work Week Hours, and Monthly Loan Payment

Demographic Characteristic	<i>n</i>	%
Gender		
Male	38	57.58%
Female	26	39.39%
Other	2	3.03%
Age		
16-20	5	7.57%
21-25	21	31.82%
26-30	12	18.18%
31-35	12	18.18%
36-40	7	10.61%
41-45	4	6.06%
46-50	3	4.55%
51-55	1	1.52%
56-60	1	1.52%
61-65	0	0%
66-70	0	0%
71-75	0	0%
76-80	0	0%
81 or greater years	0	0%
Gainful Employment Status		
Gainfully Employed	45	68.18%
Not Gainfully Employed	21	31.82%

Note: Due to rounding, totals of percentages may not equal 100.

Study Results

Descriptive statistics using logistic regression were conducted for the two predictor variables of stress management self-efficacy (mean scores of the SMSEM) and stress mindset (mean scores of the SMM). The final sample was comprised of 66 participants ($N=66$). Only completed self-report measurements of the SMSEM and the SMM were analyzed for this study,

incomplete responses were eliminated, and all questions were analyzed using SPSS software.

Descriptive statistics for the independent variables are displayed in Table 2.

Table 2

Descriptive Statistics for Stress Management Self-Efficacy and Stress Mindset (N=66)

Variable	N	Range	Mean	SD
SMSEM	66	1-10	6.968	1.916
SMM	66	1-4	2.621	.742

The SMSEM measures an individual's perception of their own ability to handle the stressors that they encounter (Jin, 2010). The SMSEM, which represents the first independent variable, is a 10-question Likert-type scale created to assess the ability of college students to handle the stress that arises throughout their college experience. Each of the 10 questions are rated on a scale in one-point increments, from 1 (very strongly disagree) to 10 (very strongly agree) and means taken for all the answers. Higher scores indicate that the individuals perceive themselves as capable of handling stressors. The mean scores on the SMSEM were used to test the hypothesis that there would be a positive relationship between the ability to manage one's own stress levels, and the ability to acquire gainful employment.

The SMM, representing the second independent variable, measures an individual's viewpoint on how stress affects them in various areas, and in either positive or negative ways (Crum et al., 2013). The SMM is an eight-question Likert-type scale, and participants were asked to identify their belief of various aspects of the effects of stress on a scale with one-point increments, from 0 (very strongly disagree) to 4 (very strongly agree), and the means taken for all the answers. Before scoring, the negative items of 1, 3, 5, and 7 were reverse keyed (0=4,

1=3, etc.). Higher levels scores indicate that the individuals view the effects of stress as more positive than those with lower scores. The mean scores on the SMM were used to test the hypothesis that there would be a positive relationship between one's views on the positive or negative influence of stress, and the ability to acquire gainful employment.

Mertler and Vannatta (2015) asserted that logistic regression is used when the dependent variable is dichotomous or having only two categories, and that the independent variables are either categorical or quantitative. In this study, the dependent variable was defined as gainfully employed or not gainfully employed, while the independent variables are quantitative, based upon the participants responses to the SMSEM and SMM.

There are a few assumptions associated with logistic regression analysis. The first assumption is that the dependent variable has two categories (Mertler & Vannatta, 2015). The second assumption is that a relationship is likely, so the dependent variable must be coded specifically (Burns & Burns, 2009). The dependent variable in this study was coded as 2 for not gainfully employed (not working in a position in the graduate's field of study with a salary which pays enough money so that their loan payment is less than eight percent of their total income), and 1 for gainfully employed (working in a position in the graduate's field of study with a salary that pays enough money so that their loan payment is less than eight percent of their total income).

The third assumption is that the sample size is large enough, and 66 samples is beyond the 10 samples per independent variable as recommended by Burns and Burns (2009). The fourth assumption is that the independent variables are also independent of each other and that the data do not show multicollinearity between each independent variable. To test this

assumption, I examined the results for variance inflation factor (VIF) to ensure that the results were close to 1. According to Akinwande, Dikko, and Samson (2015), a VIF of 1 indicates that there is no multicollinearity between the two regressors, while a VIF between 5 and 10 signifies that the high correlation between the two regressors may be problematic, and a VIF above 10 denotes that the results are not accurate due to multicollinearity. Collinearity Tolerance and Variance Inflation Factor are displayed in Table 3.

Table 3

Multicollinearity Results for Stress Management Self-Efficacy and Stress Mindset (N=66)

Independent Variable	Collinearity Tolerance	Variance Inflation Factor
Mean of SMSEM	.895	1.117
Mean of SMM	.895	1.117

Correlation analysis was conducted to provide information regarding the relationships between the variables. No significant correlation was found between any of the demographic data and the dependent variable of gainful employment, or the independent variables of stress management self-efficacy and stress mindset. The results of the correlational analyses for the independent variables are displayed in Table 4. The correlations of the independent variables with the dependent variable indicate that they will likely be significant predictors.

Table 4

Correlation with Gainful Employment, Stress Management Self-Efficacy, and Stress Mindset (N=66)

	Gainful Employment Status	SMSEM	SMM
Gainful Employment Status	--	.692**	.372**
SMSEM		--	.324**
SMM		--	

Note: **. Correlation is significant at the 0.01 level (2-tailed).

The means of the SMM and the SMSEM were compared for the gainfully employed versus the not gainfully employed graduates and is shown in Table 5.

Table 5

Comparison of Means for Stress Management Self-Efficacy and Stress Mindset (N=66)

Independent Variable	Gainfully Employed	Not Gainfully Employed
Mean of SMSEM	78.667	50.429
Standard Deviation of SMSEM	14.532	12.556
Mean of SMM	22.400	17.762
Standard Deviation of SMM	5.246	6.300

The data collected from the SMSEM and SMM were tested using logistic regression analysis to measure the relationships between stress management self-efficacy, stress mindset, and gainful employment. Logistic regression was utilized because the dependent variable of gainful employment has two values, not gainfully employed and gainfully employed. The data analysis of the logistic regression is presented in three sections to address the results of each of

the three research questions and associated hypotheses. The first section identifies the results of the first research question that examined the relationship between stress management self-efficacy and gainful employment. The second section identifies the results of the second research question that examined the relationship between stress mindset and gainful employment. The third section identifies the results of the third research question that examined the relationship between the combined variables of stress management self-efficacy and stress mindset as they related to gainful employment.

Research Question 1

The first research question asked, does stress management self-efficacy significantly increase the likelihood of gainful employment in vocational school graduates?

H_01 : The null hypothesis states that stress management self-efficacy, as measured by the Stress Management Self-Efficacy Measure, will not be associated with an increased likelihood of success, as determined by gainful employment status, in vocational school graduates.

H_11 : The alternative hypothesis states that stress management self-efficacy, as measured by the Stress Management Self-Efficacy Measure, will be associated with an increased likelihood of success, as determined by gainful employment status, in vocational school graduates.

A logistic regression analysis was conducted to predict the probability that stress management self-efficacy, measured in this study with the SMSEM, would be associated with gainful employment. In the analysis, the test for stress management self-efficacy only as a predictor of gainful employment was statistically significant. The accuracy rate for the model

showed that 88.9% of cases gainfully employed, and 76.2% of cases not gainfully employed were correctly predicted.

The coefficient on the stress management self-efficacy variable has a Wald statistic equal to 17.052, $r(64) = .692$, $p < .001$, and demonstrated a significant relationship between stress management self-efficacy and gainful employment. The B score for stress management self-efficacy was positive, $b = 1.295$, and indicates that for every 1-point increase in stress management self-efficacy scores on the SMSEM, there is a 77.22% increase in the likelihood that the graduate will be gainfully employed. The odds ratio, $OR = 2.143$, indicated that graduates with higher levels of stress management self-efficacy are two times more likely to be employed. Thus, the null hypothesis for the first research question was rejected. The results of the logistic regression analysis for stress management self-efficacy and gainful employment are displayed in Table 6.

Table 6

Summary of Logistic Regression Analysis for Stress Management Self-efficacy (N=66)

Predictor	b	OR	Wald Statistic	p	χ^2
SMSEM	1.295	2.143	17.052	.000	38.540

Research Question 2

The second research question asked, does stress mindset significantly increases the likelihood of gainful employment in vocational school graduates?

H_{02} : The null hypothesis states that stress mindset, as measured by the Stress Mindset Measure, will not be associated with an increased likelihood of success, as determined by gainful employment status, in vocational school graduates.

H_{12} : The alternate hypothesis states that stress mindset, as measured by the Stress Mindset Measure, will be associated with an increased likelihood of success, as determined by gainful employment status, in vocational school graduates.

A logistic regression analysis was conducted to predict gainful employment using the predictor of stress mindset, as measured by the SMM. In the analysis, the predictor of stress mindset only, as measured by the SMM, correctly predicted 93.3% of those gainfully employed, while correctly predicting only 33.3% of the not gainfully employed students. The coefficient on the stress mindset variable had a Wald statistic equal to 7.809 and demonstrated a significant relationship between stress mindset and gainful employment, $r(64) = .372, p < .005$.

The B score for SMM was positive, $b = 1.210$, and indicated that for every 1-point increase in stress mindset scores on the SMM, there is an 82.64% increase in the likelihood that the graduate will be gainfully employed. The odds ratio, $OR = 3.353$ indicated that graduates with more positive levels of stress mindset are three times more likely to be employed. Thus, the null hypothesis for the second research question was rejected. The results of the logistic regression analysis for stress mindset and gainful employment are displayed in Table 7.

Table 7

Summary of Logistic Regression Analysis for Stress Mindset (N=66)

Predictor	b	OR	Wald Statistic	p	χ^2
SMM	1.210	3.353	7.809	.005	9.550

Research Question 3

The third research question asked, do stress management self-efficacy and stress mindset significantly increase the likelihood of gainful employment in vocational school graduates?

H_03 : The null hypothesis states that stress management self-efficacy and stress mindset, as measured by both the Stress Management Self-Efficacy Measure and the Stress Mindset Measure, will not be associated with an increased likelihood of success, as determined by gainful employment status in vocational school graduates.

H_13 : The alternate hypothesis states that stress management self-efficacy and stress mindset, as measured by both the Stress Management Self-Efficacy Measure and the Stress Mindset Measure, will be associated with an increased likelihood of success, as determined by gainful employment status in vocational school graduates.

A multiple logistic regression analysis was conducted to predict gainful employment using the predictors of stress management self-efficacy and stress mindset, as measured by the SMSEM and the SMM. In the analysis, the predictors of stress management self-efficacy and stress mindset correctly predicted 95.6% of those gainfully employed, as measured by graduate loan payments of equal to or less than 8% of their total salary, while correctly predicting 76.2% of the not gainfully employed students. A chi-square omnibus test of model coefficients was used which showed that the overall model was significant, thus the null hypothesis can be rejected $\chi^2(2, N = 66) = 44.195, p < .001$.

When examining them together, the coefficient on the stress management self-efficacy and stress mindset variables had a Wald statistic equal to 13.551 for stress management self-efficacy and 4.554 for stress mindset, and indicated a significant relationship between stress management self-efficacy, stress mindset, and gainful employment, and demonstrated that both stress management self-efficacy and stress mindset were uniquely contributing factors in gainful employment, $\text{Gainful Employment} = 1.463(\text{SMSEM}) + (1.560) (\text{SMM}) + (-12.686)$.

The B score for SMSEM was positive $b = 1.463$ and indicated that for every 1-point increase in stress management self-efficacy scores on the SMSEM, there is a 68.35% increase in the likelihood that the graduate will be gainfully employed. The B score for the SMM was positive, $b = 1.560$ and indicated that for every 1-point increase in stress mindset on the SMM, there is a 64.10% increase in the likelihood that the graduate will be gainfully employed. Also, the odds ratio when looking at both the SMM and SMSEM, the $OR = 4.758$ of the unique contribution of the SMSEM indicated that graduates with higher levels of stress management self-efficacy are more than 4 times more likely to be employed. When looking at both the SMM and SMSEM, the odds ratio, $OR = 4.320$ of the unique contribution of SMM indicated that graduates with more positive levels of stress management self-efficacy are 4 times more likely to be employed. Thus, the null hypothesis for the second research question was rejected. The results of the logistic regression analysis for stress mindset and gainful employment are displayed in Table 8.

Table 8

Summary of Logistic Regression Analysis for Stress Management Self-efficacy and Stress Mindset

Predictor	b	OR	Wald Statistic	p
SMSEM	1.463	4.758	13.551	.000
SMM	1.560	4.320	4.554	.005
Constant	-12.686		11.407	.001

Note. $N = 66$. The dependent variable is gainful employment (Yes or No)

Summary

The purpose of this study was to determine if there was a relationship between stress management self-efficacy, stress mindset, and gainful employment. The participants were recruited from a list of graduates from a vocational school, and were sent a link to Survey

Monkey, yielding 66 valid responses. The data was analyzed using logistic regression and multiple logistic regression using SPSS. The results showed that there was a positive relationship between stress management self-efficacy stress mindset and acquiring gainful employment. The results suggested that participants with either high stress management self-efficacy scores or high stress mindset scores were more likely to acquire gainful employment than individuals with lower scores. Those individuals with higher scores in both stress management self-efficacy and stress mindset, were even more likely to be gainfully employed than those with high scores in only the SMM or the SMSEM. These results demonstrate each measure as an effective predictor of gainful employment, with an increased overall ability to correctly predict gainful employment with high scores in both measures due to the impact of each measure.

The SMSEM was designed to measure the degree to which the participants perceived that they were able to handle the stressors that they encountered while in school (Jin, 2010). According to Jin (2010), high scores on the SMSEM are related to a greater confidence in being able to cope with school related stress. The SMM was designed by Crum, et al. (2013) was designed to assess the extent to which an individual believes that stress contributes to various areas of their life in a positive or negative manner. High scores on the SMM, according to Crum et al. (2013) indicate a more positive outlook on how stressors affect various areas of life.

By looking at the independent variables both individually and together, the results of this study indicate that stress management self-efficacy and stress mindset are both contributing factors in the gainful employment of graduates of vocational schools. These results will be discussed in more detail in Chapter 5. There will be a discussion of the interpretation of the

study, limitations, and recommendations for future studies. Chapter 5 will also include implications for social change.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this study was to empirically study whether levels of student perception of stress management self-efficacy are significantly associated with an increase of gainful employment in technical school graduates, and whether levels of student perception of stress mindset are significantly associated with an increase in gainful employment in vocational school graduates. Graduate gainful employment is operationally defined as having a job in their field of study that pays an amount so that their loan payments are less than 8% of their total income or less than 20% of their disposable income.

This study was conducted in order to develop greater insight into which graduates of technical schools are unable to obtain gainful employment, and why this situation occurs. This research focused on the way that technical school students react to stress, as stress management self-efficacy has previously only been shown to increase student success in the university setting (Sawatzky et al., 2012). Wye and Lim (2009) demonstrated increased employability of graduates with higher levels of stress tolerance. No research, however, has been conducted on the impact of stress management self-efficacy, and stress mindset on gainful employment among students in vocational/technical schools. This study filled this gap by quantitatively investigating whether the dependent variable of gainful employment was influenced by the student's levels of stress management self-efficacy and stress mindset. The results of this study indicate that stress management self-efficacy and stress mindset are both contributing factors in the gainful employment of graduates of vocational schools.

The aim of this chapter is to interpret the findings of the study. The chapter begins with a discussion of the relationship between gainful employment and stress management self-efficacy.

Next the relationships between gainful employment and stress mindset are discussed. The chapter then identifies the limitations of the study, provides recommendations for further research, presents implications for social change, and provides a conclusion to the study.

Interpretation of Findings

A regression analysis was done to determine whether stress management self-efficacy influenced gainful employment as indicated by the means of the SMSEM, and whether stress mindset as indicated by the SMM, influenced gainful employment. Combined, the SMSEM and the SMM correctly classified 95.6% of those graduates who were gainfully employed and 76.2% of those graduates who were not gainfully employed. On its own, the SMSEM correctly classified 88.9% of those graduates who were gainfully employed and 76.2% of those who were not gainfully employed. Therefore, the SMSEM was overall correct 84.8% of the time. On its own, the SMM correctly classified 93.3% of those graduates who were gainfully employed, but only 33.3% of those graduates who were not gainfully employed. Overall, the SMM was correct 74.2% of the time.

In the multivariate model, both independent variables are examined so that more of the variance is explained. The odds ratio showed that those with a higher level of stress management self-efficacy were twice as likely to be employed as those with lower levels. The odds ratio for stress mindset showed that those with a higher level of positive stress mindset were three times more likely to be gainfully employed than those with lower levels. When examined together, graduates who had higher levels of both stress management self-efficacy and positive stress mindset were shown by the odds ratio to be four times more likely to be gainfully employed than those with lower levels.

The results of this study indicated that while both increased levels of stress management self-efficacy and a positive stress mindset are associated with an increased likelihood of gainful employment, on its own, stress management self-efficacy was a better indicator than was stress mindset, on its own. The findings confirm many previous studies that have shown that either or both stress management self-efficacy, and having a positive stress mindset, benefit individuals in a variety of ways that are not specifically related to education (Brosschot, 2010; Clark & Dodge, 1999; Lev & Owen, 1996). Humphrey (2012), found that stress management helped students deal with the pressures associated with being a student. Yusoff (2010), found that positive coping methods were more beneficial than negative coping mechanisms in students. Pajares (1996) demonstrated that self-efficacy beliefs of students were just as important as their actual competency levels in their ability to succeed in school.

My study results showed that technical school graduates were more employable if they believed in their own ability to manage their stress levels. Similarly, Nurmi et al. (2002), found that those individuals who felt themselves more able to achieve their goals were more likely to be employed. Lazarus and Folkman (1984), discussed the importance for employees to be able to cope with the stressors that they encounter in their workplace in order to remain employed. These results compare to my study indicating that high levels of stress management self-efficacy were associated with a greater likelihood of employment.

Theoretical Implications

Self-efficacy is the part of social cognitive theory that includes one's belief in their ability to perform a specific task or set of tasks. There are three main areas of self-efficacy, as identified by Lunenburg (2011). The first area is the magnitude of self-efficacy, which indicates

how difficult the task is. The second area is the strength of self-efficacy, which is the level of confidence the individual has in their ability to handle various levels and types of tasks. The third area is self-efficacy generality, which is the degree to which one's ability to handle one type of task can be translated into other types of tasks.

Social cognitive theory indicates that those who have higher levels in any or all of the three parts of self-efficacy will have more confidence when approaching new tasks (Bandura, 1997; Lunenburg, 2011). Self-efficacy depends upon cognitive modeling in acquiring the knowledge of the task itself, as well as the self-awareness of one's abilities in similar tasks (Debowski, Wood, & Bandura, 2001; Gist, 1989). Students, according to Lunenburg (2011), tend to attempt those tasks for which they already have a belief of self-efficacy. Specifically, stress management self-efficacy addresses the individual's belief that they can handle the stresses that they encounter in life.

As a student, there is a significant increase in the amount of perceived stress, and Sawatzky et al. 2012 found that higher levels of stress management self-efficacy improved student success rates. As student beliefs in their own ability to handle the stress that occurs during the educational process increases, so does their success rate. This success rate also affects graduate employability, as according to Wye and Lim (2009), college graduates with higher levels of stress tolerance are more employable. These results are similar to my study, which, although it deals with technical school graduates rather than traditional college graduates, also indicates an increased likelihood of employment for those with a greater ability to handle stress.

The higher levels of stress tolerance come across during the interview process, as those who are more highly stressed often indicate this state of being physiologically to the interviewer

via tangible symptoms such as sweaty palms, excessive movement, or hand wringing (Solberg, Good, & Nord, 2009). A noticeably stressed interviewee is less likely to be hired according to Culbertson, Weyhrauch and Waples (2016), as these behaviors may be interpreted as deceptive during the interview process, which is a cue to the employer to choose not to hire that individual. These results agree with those of my study and may help to explain why technical school graduates who had a higher belief in their own stress management self-efficacy were more employable than those with a lower belief in their own stress management self-efficacy.

Ursin and Ericksen's cognitive activation theory of stress (2004) describes the actions of stress in the human body as systems of alarm and response of varying types and levels and described the relationship of stress to states of body health and disease. Furthermore, Ursin and Ericksen (2004) explained the various meanings of the term stress as it is used in describing the event causing stress, the levels of perceived stress, the general stress response, and the perception of the general stress response. They found that positive expectations of the perceived stress response led to a positive stress response with no ill effect on the body, where a negative expectation of the perceived stress response led to a negative stress response with a harmful effect on the body (Ursin & Ericksen, 2004).

Crum and Langer (2007) showed that a positive mindset increased physical health, in just believing that it would. Further, Crum et al. (2013) showed that a positive stress mindset improved performance, and Yusoff (2010) identified academic success as a benefit of having a positive stress mindset. Perceived stress, therefore, can benefit or hinder success depending upon the mindset of the individual. My study results correspond with these studies and predict

the relationship between having a positive stress mindset and improved employment rates among the technical school graduates.

Limitations of the Study

A few limitations of the study must be addressed. Several limitations exist that are characteristic of quantitative research. First and foremost, the quantitative method is able to address the research questions and hypotheses but is incapable of thoroughly examining the individual perceptions and experiences of each graduate, such as those related to their own stress management self-efficacy and stress mindset, and how these affected their ability to obtain gainful employment. The results of this study however were able to identify the relationships in general using statistical confidence which demonstrated that the indicated associations did not occur by chance.

Second, participants may not have answered truthfully or did not understand the questions posed by the instruments or the categories to which they responded. Participants may also have not responded truthfully or did not understand the requests for information such as wages or loan payments. However, the data did not show any outliers patterns that were discrepant from past research and theory. Also, the tools used are reliable and valid measures. However, this limitation is acknowledged as per any self-report response format, although it may not have affected the validity of this study.

Third, the population chosen were all recent graduates, within the past year, of a technical school. A school in another location, or with a different set of technical programs may have led to differing answers on the measurements. Other technical schools might have previously addressed stress management self-efficacy or stress mindset to help their students succeed in

acquiring gainful employment. Thus, these findings are limited to the recent graduates from a technical school in the specific geographical location.

Fourth, the study was sent out in an email request, and the people that chose to respond may not adequately represent the college's graduates as a whole. Perhaps those who responded were happy with their new career or stressed that they were yet unemployed. The results may be representative of the individuals who responded to the survey request but may not be generalizable across the overall technical school general population.

Recommendations

Findings from the current study, combined with other studies in the field, can be used to suggest recommendations for further study. First, future researchers could address the limitations in the sample by acquiring a larger sample size from several technical schools. Using a wider sample, and tracking graduates over a longer period, will provide increased external validity and predictability.

Second, methods for improving stress management self-efficacy and stress mindset in technical students would be valuable for increasing employment rates of graduates. If increased stress management self-efficacy and positive stress mindsets improve employment rates, stress management self-efficacy programs and positive stress mindset training should be developed in order to provide students with the best possible opportunities for success. One aspect that should be included in future research to improve this training, is student grade point average and how it interacts with stress management self-efficacy and stress mindset, as well as how it influences student success and employability.

Additionally, research could be done to further delineate possible confounding factors, such as previous life experiences, additional outside stressors, or the effects of classmates and teachers on stress. Identifying how these confounding factors affect stress management self-efficacy and stress mindset individually and together could further predict outcomes of graduate employability. Finally, future researchers could conduct a study that broadens the scope of knowledge, using mixed methods, on how stress management self-efficacy and stress mindset interact in affecting graduate employability.

Implications

The potential implications for positive social change are significant due to the importance of employment for technical school graduates. At the individual level, increasing the understanding of how and why graduates become gainfully employed may lead to identification of problem areas, thus providing opportunities for interventions, problem specific training, or mentoring programs. Students' stress and mindset scores could be checked early in the enrollment process and provided to school counselors who could be more effectively preparing them for future employment throughout their entire educational process.

At the organizational level, it is important to ensure that every student receives the best possible opportunities for success. Stress management training was suggested by Sawatzky et al. (2012) as an important way to improve student success rates, and this study shows that would benefit employability as well. Leland (2015) suggested that mindfulness training should be put into practice in every aspect of the educational process, and this research showing the importance of stress mindset corroborates and substantiates the claims. Stress mindset training added

through the educational process and used as employment preparation will benefit graduates of technical school training programs.

Policy changes related to student stress management self-efficacy and positive stress mindset training will also be beneficial. In technical schools, the Gainful Employment Rule (United States Department of Education, 2015) currently requires private vocational, technical and other for-profit schools to demonstrate that their graduates are employable and earning enough to comfortably pay back their loans. Without graduate employability, schools will be unable to keep federal financial aid available for their students.

Without federal financial aid programs available for the students, schools will not be able to remain open and provide an education for those who choose not to follow a more traditional route. Having a greater understanding of aspects that affect the employability of graduates is key to creating interventions that will lead to more employable graduates. The results of this study provide insight into which areas should be further researched and developed into beneficial training methods to improve graduate success rates.

Conclusions

In conclusion, the research was successful in answering the research questions. The current results indicate that together stress management self-efficacy and stress mindset were able to correctly predict the majority of the graduates that were gainfully employed, and those graduates who were not gainfully employed. Individually, the SMSEM was more effective at predicting those who were not gainfully employed, while the SMM was more effective at predicting those who were gainfully employed.

The combination of higher levels of both stress management self-efficacy and positive stress mindset is strongly associated with increased rates of gainful employment. People who are good at managing their own stress levels are much more likely to be gainfully employed than those who are not good at managing their own stress, and individuals that have a more positive stress mindset, those that believe stress is beneficial, are much more likely to be employed than those with a negative stress mindset. The results from this study support previous research showing the importance of stress management self-efficacy and a positive stress mindset in student success in university and community college graduates and increases the knowledge base to also include technical school graduates.

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Appendix A: Stress Management Self-Efficacy Measure

Please rate the extent to which you would have agreed or disagreed with the following statements while you were in school. For each question choose from the following alternatives:

1 = Very Strongly Disagree

2 = Strongly Disagree

3 = Mostly Disagree

4 = Moderately Disagree

5 = Slightly Disagree

6 = Slightly Agree

7 = Moderately Agree

8 = Mostly Agree

9 = Strongly Agree

10=Very Strongly Agree

- 1) I felt confident managing my stress well.
- 2) I felt confident identifying the causes of stress.
- 3) I felt confident identifying physiological indicators of stress.
- 4) I felt confident predicting the consequences of stress.
- 5) I felt confident managing stress through eating healthy.
- 6) I felt confident managing stress through physical activity.
- 7) I felt confident getting social support I need.
- 8) I felt confident combating loneliness.
- 9) I felt confident managing anxiety.
- 10) I felt confident managing depression.

Appendix B: Stress Mindset Measure

Please rate the extent to which you agree or disagree with the following statements. For each question choose from the following alternatives:

0 _ Strongly Disagree

1 _ Disagree

2 _ Neither Agree nor Disagree

3 _ Agree

4 _ Strongly Agree

1. The effects of stress are negative and should be avoided.
2. Experiencing stress facilitates my learning and growth.
3. Experiencing stress depletes my health and vitality.
4. Experiencing stress enhances my performance and productivity.
5. Experiencing stress inhibits my learning and growth.
6. Experiencing stress improves my health and vitality.
7. Experiencing stress debilitates my performance and productivity.
8. The effects of stress are positive and should be utilized.

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Appendix D: Permission to use SMM

Hello Dr. Crum,

My name is Minda Brown, and I am a health psychology student in the doctoral program at Walden University. I am seeking permission to utilize your Stress Mindset Measure in my dissertation. My study is on the relationship between stress management self-efficacy, stress mindset and vocational student success. I would like to provide your measure, and Jin's (2010) Stress Management Self-Efficacy Measure to graduates of a vocational school using a logistic regression to correlate the results with the ability of graduates to acquire gainful employment. Please let me know if you will allow me to use your measure in my dissertation. Thank you very much in advance,

Minda Brown

Student, PhD in Health Psychology

minda.brown@waldenu.edu

Hi Minda, of course. You can find it on our website: <https://mbl.stanford.edu>

Alia Crum, PhD

Assistant Professor

Department of Psychology

Stanford University

Stanford Mind & Body Lab

<https://mbl.stanford.edu>

Stanford SPARQ

<https://sparq.stanford.edu>

Appendix E: Demographic Survey Questions

- 1) Do you identify as (select all that apply)?
 - a. Male
 - b. Female
 - c. Other _____
- 2) How old are you?
 - a. 16-20 years
 - b. 21-25 years
 - c. 26-30 years
 - d. 31-35 years
 - e. 36-40 years
 - f. 41-45 years
 - g. 46-50 years
 - h. 51-55 years
 - i. 56-60 years
 - j. 61-65 years
 - k. 66-70 years
 - l. 71-75 years
 - m. 76-80 years
 - n. 81 years and over
- 3) Date you started your program _____
- 4) Date you finished your program _____

- 5) City where you attended school _____
- 6) Employment status
- a. Employed in your field of study
 - b. Unemployed in your field of study
- 7) If employed, date of hire _____
- 8) Hourly wages \$ _____
- 9) Usual hours of work (per week) _____
- 10) Loan payment (monthly) \$ _____